FOUNDED IN 1856

RAILWAY AGE

DECEMBER 17, 1949

DOUBLE THE TONNAGE

at ⅓ the fuel cost

FIVE General Motors F7 locomotives, replacing 15 Texas type steam locomotives on the Texas & Pacific's "Red Ball" freight, are producing the greatest net-ton-miles per train-hour in the railroad's history.

Hauling perishables on guaranteed schedules over the 610-mile stretch between El Paso and Forth Worth, 6000 h.p. F7's are rated by the railroad at 5,400 tons eastbound and 5,000 tons westbound — almost double the ratings of the steam locomotives. Tons handled by 4500 h.p. F7 units average 4,000 east and 3,600 west on ruling grades of 1 to 1.3%.

Fuel savings of General Motors freight Diesels for the month of May, 1949, totaled $38,734.78 compared with fuel costs for similar operation with steam locomotives. Actual fuel consumption of the Diesels was 274,067 gallons, costing $21,662.72, to handle 154,525 thousand gross-ton-miles. T. & P. officials estimate it would require 1,227,820 gallons of fuel oil, costing $60,397.50, to handle the same tonnage with the steam locomotives.

ELECTRO-MOTIVE

DIVISION OF GENERAL MOTORS—LA GRANGE, ILL.

Home of the Diesel Locomotive

GENERAL MOTORS LOCOMOTIVES

Lower Diesel Maintenance Costs

Engines stay cleaner when lubricated with Texaco Dieseltex HD

YOU'RE not "experimenting" when you turn to *Texaco Dieseltex HD*. This fine railroad Diesel lubricating oil has proved its worth in service on the rails. It has more than enough of what it takes to meet the stiffest requirements of leading Diesel locomotive builders.

Texaco Dieseltex HD keeps engines cleaner, better protected and more efficient because it has high detergent-dispersive characteristics, plus an exclusive formula containing a special heavy-duty additive that gives exceptional resistance to oxidation and sludge formation.

Let a Texaco Lubrication Engineer show you how *Texaco Dieseltex HD* is increasing efficiency and economy for other railroads. Ask him to tell you about Texaco's Systematic Engineering Service. Just call the nearest Railway Sales Division office listed below, or write The Texas Company, *Railway Sales Division,* 135 East 42nd Street, New York 17, N. Y.

NEW YORK • CHICAGO • SAN FRANCISCO • ST. PAUL • ST. LOUIS • ATLANTA

TOLEDO, PEORIA & WESTERN RAILROAD — "Best East to West" — keeps these two 1500 h.p. Alco Road Switchers busy around the clock. They average 12,000 miles monthly. Both units are lubricated with *Texaco Dieseltex HD* exclusively.

TEXACO

TEXACO Dieseltex HD

FOR ALL RAILROAD DIESELS

TEXACO STAR THEATRE presents MILTON BERLE on Television every Tuesday night. METROPOLITAN OPERA broadcasts every Saturday afternoon.

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year, U. S. and Canada. Single copies, 50 cents each. Vol. 127, No. 25.

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at 1/3 the fuel cost

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Camera crew on location filming the electric-furnace sequence for industrial motion picture, "Alloy Steels"

"ALLOY STEELS"

Film Story of Controlled Production of Alloy and Special Steels

Bethlehem has completed a sound motion picture describing the production of alloy steels.

The film explains every phase of the process, beginning with the raw materials. It shows both electric and open-hearth furnaces in operation, as well as hot-rolling, billet preparation, heat-treatment, and cold-drawing. It deals extensively with highly-developed laboratory methods for maintaining quality on a mass-production basis.

"Alloy Steels" is intended for both technical and general audiences. It takes 45 minutes to show, and is available in either 16 or 35 mm. It is especially suitable for showing before such groups as:

Manufacturing and Industrial Companies
Jobbers and Dealers
Civic and Service Clubs
Colleges and Technical Schools
Technical Societies and Trade Associations

There is no charge for the use of *"Alloy Steels"* other than return shipping cost. Requests should be made at least three weeks prior to date needed. Address your requests to:

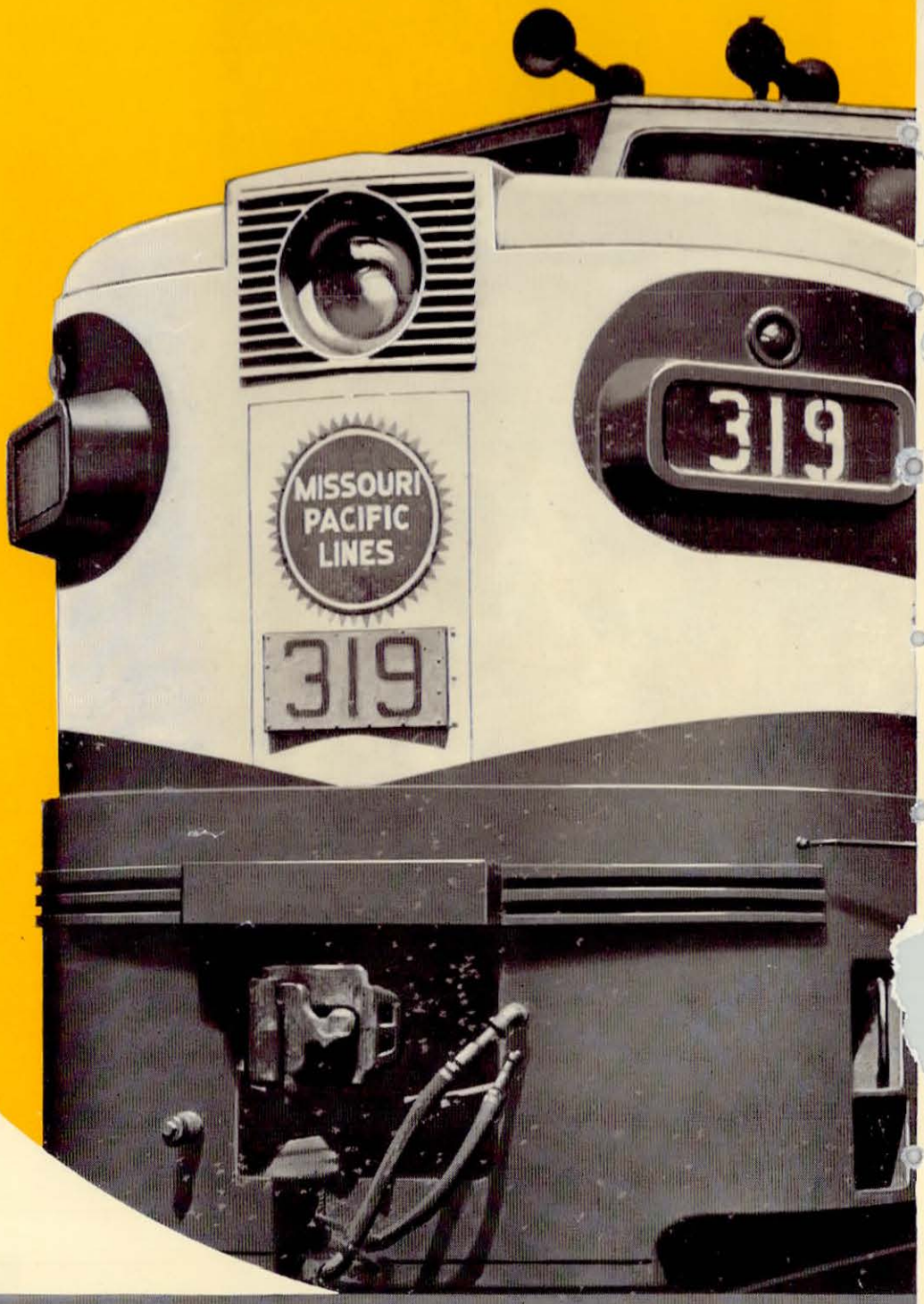
BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

★ BETHLEHEM STEEL ★

Alco GE

HAULS 30% MORE



Alco GE

AMERICAN LOCOMOTIVE

TONNAGE IN LESS TIME
on this
TOUGH MOPAC RUN!

Recently, Missouri Pacific Railroad officials revealed that Alco-G.E. 3000 and 4500-hp freight locomotives are pulling thirty percent more tonnage and at higher speeds than replaced motive power handled in the tough, highly competitive service between the St. Louis Gateway and Texas. Running time has been reduced approximately four and one-half hours for the 515-mile run between Dupo, Ill. and Texarkana.

Trains of 5000 tons are easily handled by a 2-unit 3000-hp locomotive, while the 3-unit 4500-hp locomotives can handle trains as heavy as 9000 tons.

Alco-G.E. locomotives are currently proving themselves on the most difficult assignments of many railroads. Ask your Alco-G.E. representative how these locomotives can help you solve your motive-power problems.

Built TO DO YOUR RAILROAD'S TOUGHEST JOBS

IN CANADA Alco GE IS MLW GE

and GENERAL ELECTRIC

113-237

50% FEWER WEARING PARTS

Only 2 joints, gaskets and springs per connection instead of 4.

Lightweight steel welded construction, reducing the weight approximately 30% and requiring less labor to handle.

This construction also reduces the number of parts necessary for the men to handle and for the store department to carry in stock.

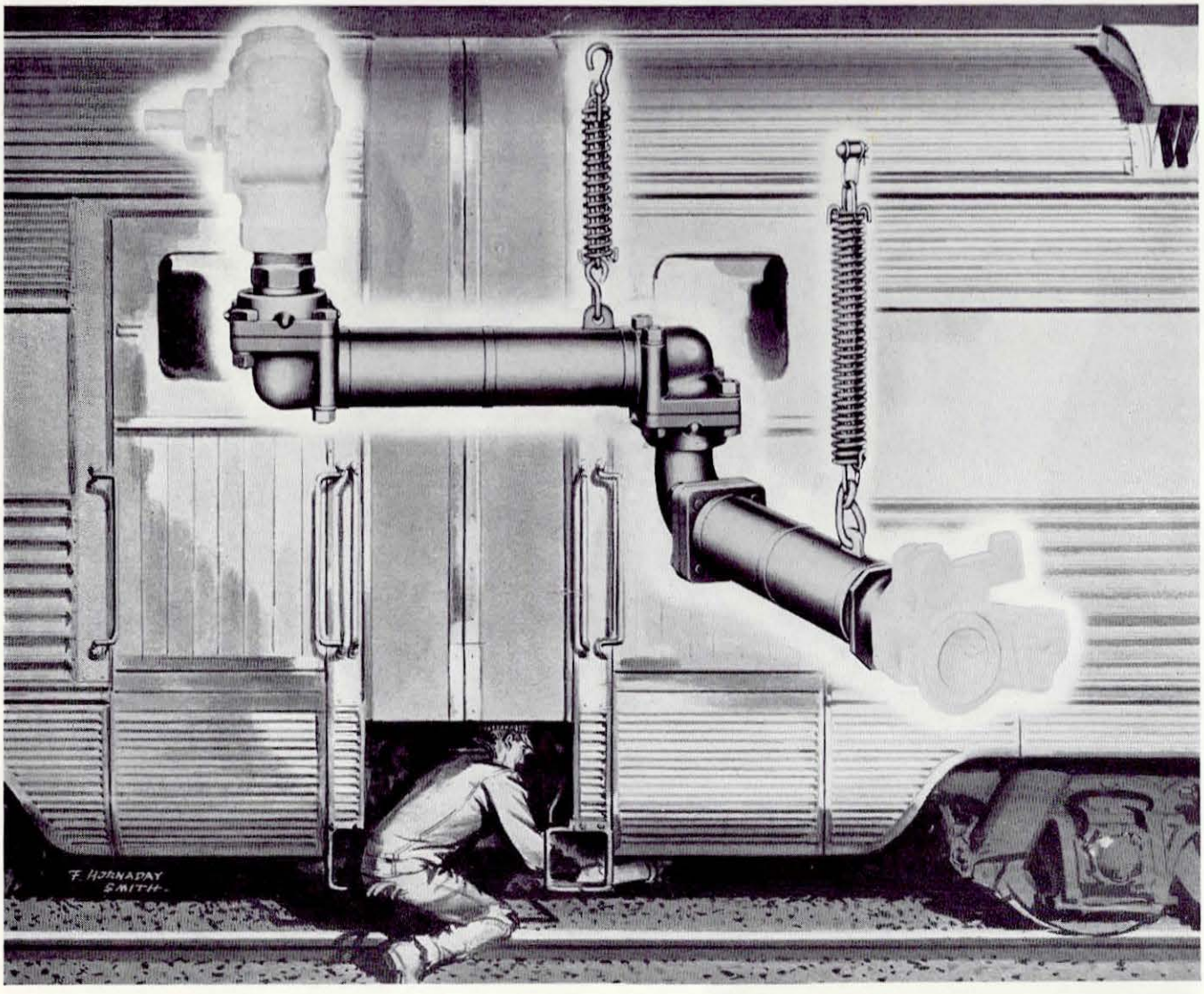
Pressure-sealed, hard, long-wearing gaskets eliminate the possibility of sudden failure.

Hardened steel chromium plated balls provide movement in all directions.

Maximum steam capacity.

Write Barco Manufacturing Co., 1805B Winnemac Avenue, Chicago 40, Illinois. In Canada: The Holden Co., Ltd., Montreal, Can.

BARCO STEAM HEAT CONNECTIONS



BARCO ··

STEAM HEAT CONNECTIONS FOR PASSENGER CARS, DIESEL, STEAM AND ELECTRIC LOCOMOTIVES

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

No "SQUATTERS" Allowed

INSIDE YOUR DIESEL CRANKCASE!

NEWEST GARGOYLE OILS

keep incomplete combustion particles and oxidation products on the move...bearings and oil passageways free of sludge.

★ ★

For CONTINUOUS POWER—Rely on the BEST!

Here's a spot inside Railroad Diesels where you're likely to have unwelcome settlers. That oil shown draining down from the cylinders brings with it contaminating materials that tend to settle on the crankcase surfaces and oil passageways. Socony-Vacuum has licked this problem. The latest Gargoyle Oils for Railroad Diesels are designed to keep these materials dispersed, so they can't collect on vital parts or clog passageways. Your crankcase—as well as your cylinder walls and pistons—*stays clean.*

SOCONY-VACUUM

GARGOYLE Railroad Lubricants

SOCONY-VACUUM OIL COMPANY, INC.
and Affiliates: MAGNOLIA PETROLEUM CO.
GENERAL PETROLEUM CORPORATION

Rely on **SOCONY-VACUUM**
Correct Lubrication

Mining Gold FOR THE RAILROADS

When Pullman-Standard Power Track Cribbers start digging . . .

—cribs come clean in seconds . . .

—and track-maintenance costs take a nose dive.

Suppose *we* dig into just one of numerous case histories, and let the results recently reported by a leading railroad system tell their own story . . . of "gold-mining" performance by Pullman-Standard *Power Track Cribbers*.

DATA FILE "X"

CRIBBING WITH POWER TRACK CRIBBER

Type of ballast: hard, cemented rock.
Single-track operation.
Total cribs cleared: 10,108.
Cribs per minute: 1.8.
Time per crib: 32.8 seconds.
Labor cost per crib: 13.8¢.
Labor cost per mile: $430.00.

COMPARISON WITH HAND CRIBBING (estimated)

Labor cost per crib: 61.5¢.
Labor cost per mile: $2,000.00.

SAVING—MACHINE vs. HAND CRIBBING

In labor cost per mile: $1,570.00 (78%).

You'll want this fact-filled brochure

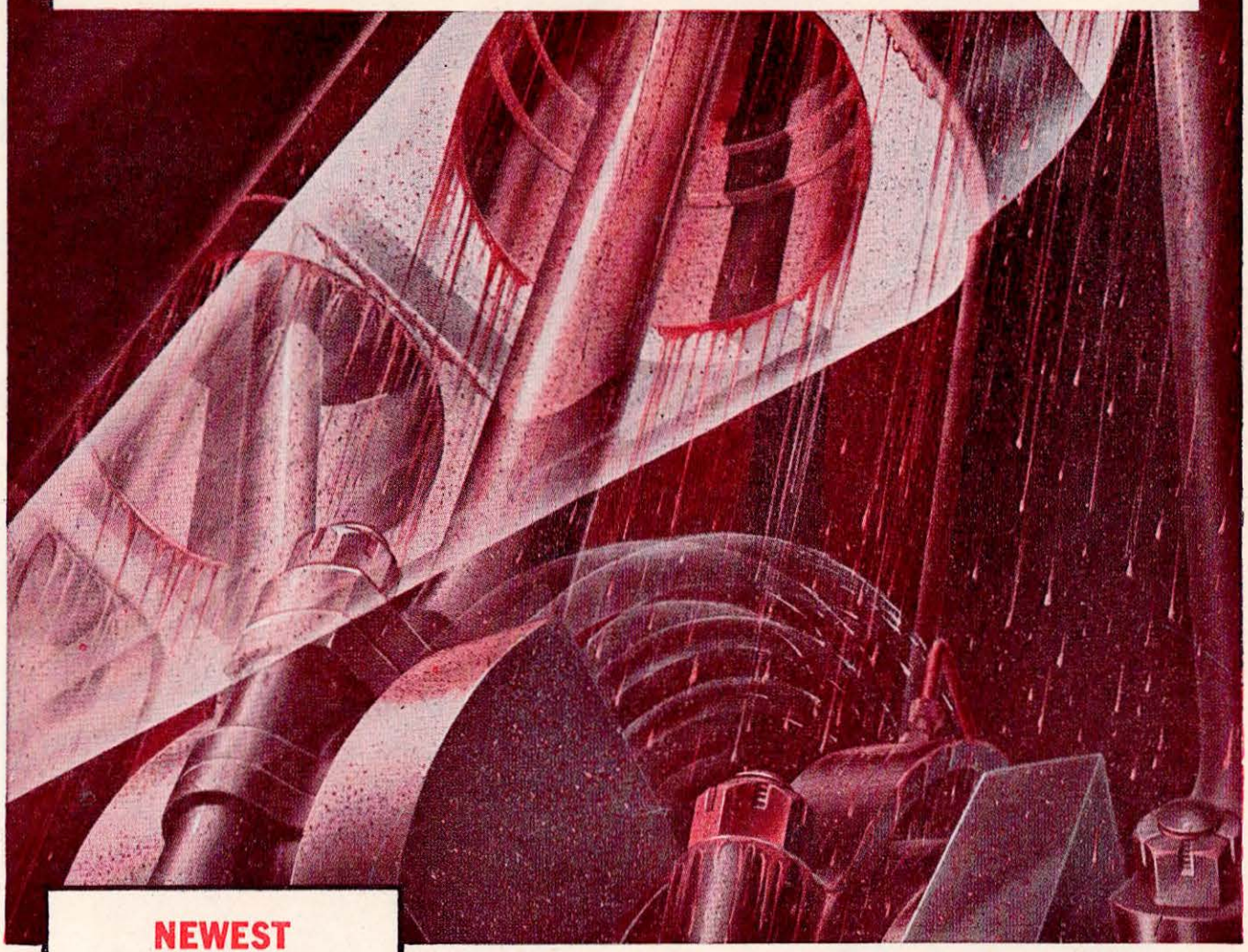
"Track at Its Level Best" clearly explains the construction and operation of the Pullman-Standard Power Track Cribber, Ballast Cleaner, and Power Ballaster (tamper). 24 pages: profusely illustrated; data-file size. Let us send you a copy.

Mechanized track maintenance with Pullman-Standard equipment offers *proved economies*, to set against increased wages and the 40-hour week. The Pullman-Standard Power Track Cribber *alone* can effect great savings—and its teammates, the Ballast Cleaner and the Ballaster, may be used with it, in production-line sequence, to save additional costly man-hours.

These economies are *facts of record*, in instance after instance. They are worthy of the most careful consideration in any railroad's current budget planning. Further information will be gladly supplied.

No "SQUATTERS" Allowed

INSIDE YOUR DIESEL CRANKCASE!



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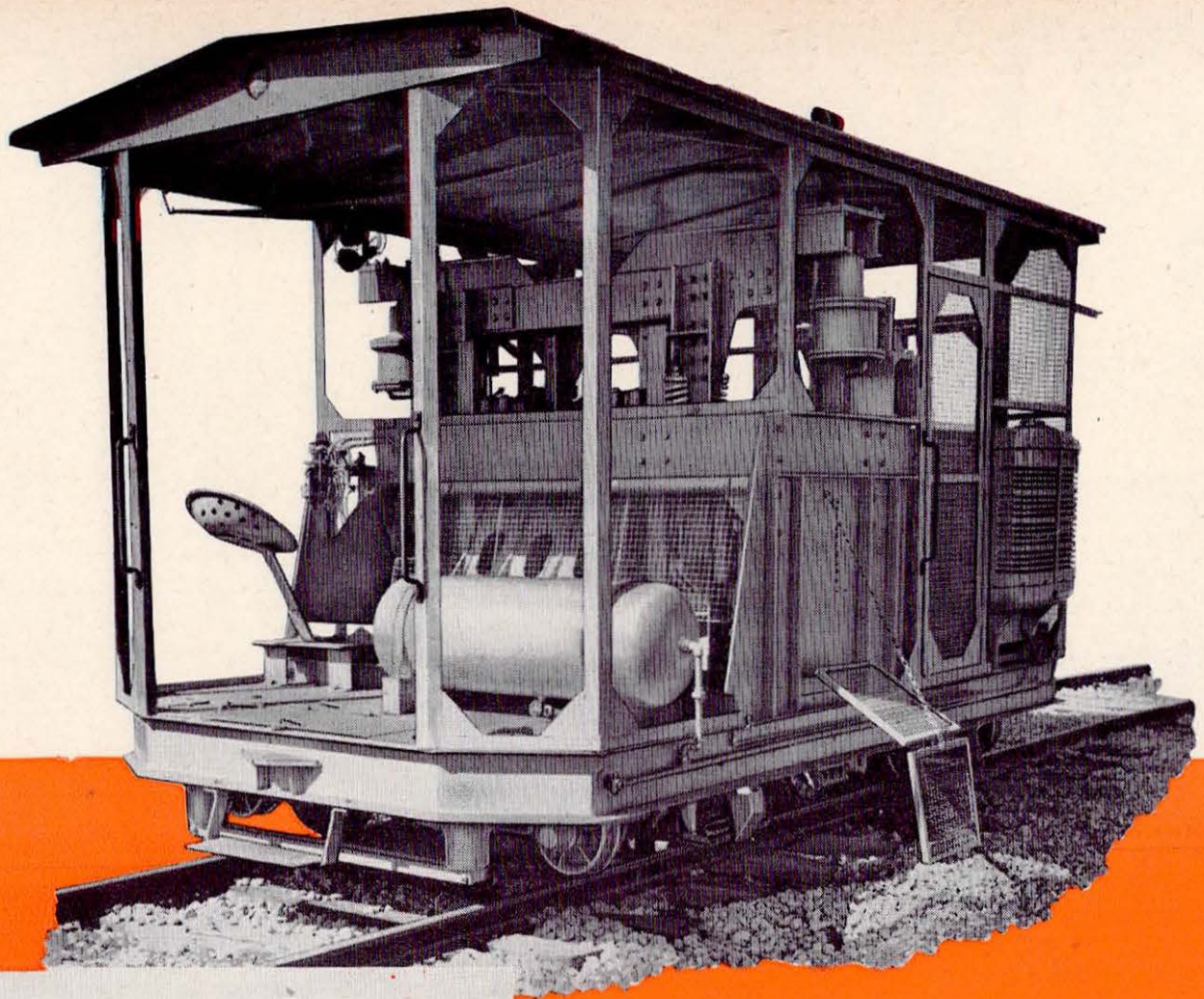
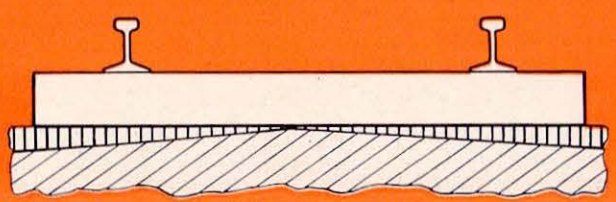


Powered by a 100-h.p. gasoline or Diesel engine, the Pullman-Standard Power Track Cribber travels to and from location at a speed of 25 miles per hour. Power-operated jacks and transverse wheels permit complete setoff in from three to five minutes.

Railroads operating Pullman-Standard Power Track Cribbers think in terms of *mileage* instead of footage. Typical performance—1.8 cribs per minute.



To restore proper drainage, the Power Cribber cuts a uniform profile, level with the tie base at the center and sloping to 3½ inches below the tie ends.

Double action! While digger bars are clearing out one crib, the "pile-driver" impact bars shown at right are loosening the ballast in the crib ahead.

Pullman-Standard

CAR MANUFACTURING COMPANY

POWER BALLASTER DIVISION

79 East Adams Street, Chicago 3, Illinois

BIRMINGHAM 3, 1004 First National Building • CLEVELAND 15, 907 Midland Building
PITTSBURGH 19, 1115 Gulf Building • NEW YORK 17, 52 Vanderbilt Avenue
WASHINGTON 6, D. C., 1025 Connecticut Avenue, N.W.

SAN FRANCISCO SALES REPRESENTATIVE: MARK NOBLE

SAVE 3 WAYS.
CHILL
WHEELS

...RIGHT AWAY

WITH

Chilled Car Wheels

$LOWER FIRST COST!

$LESS INVENTORY REQUIREMENTS!

$REDUCED REPLACEMENT AND WHEEL SHOP COSTS!

You get *immediate savings* with Chilled Car Wheels—economies that pay off right now—when they do the most good. That's a mighty important thing to remember. For full information get in touch with any member company of the Association of Manufacturers of Chilled Car Wheels.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

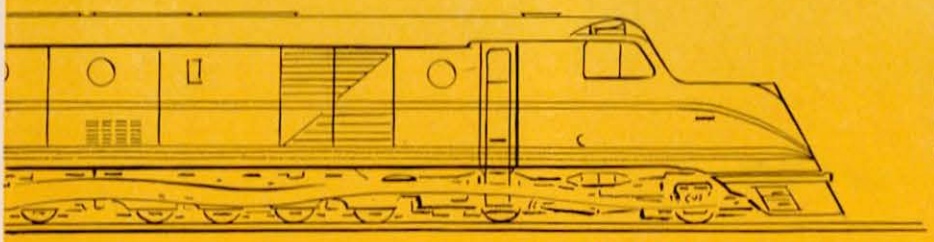
445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

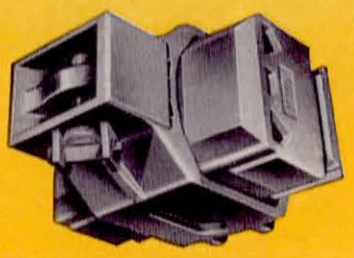
American Car & Foundry Co. • Canadian Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.
Southern Wheel (American Brake Shoe Co.)

December 17, 1949

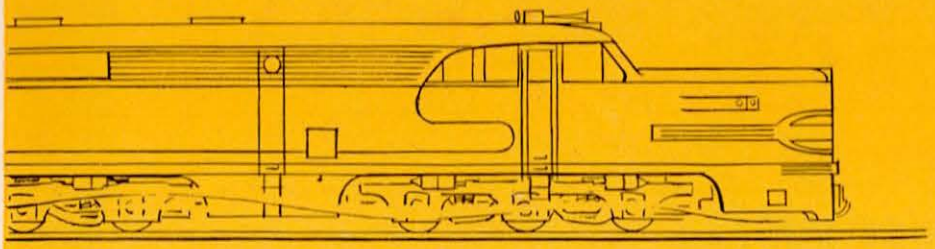
7893

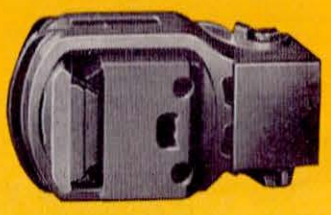
PROTECT EQUIPMENT



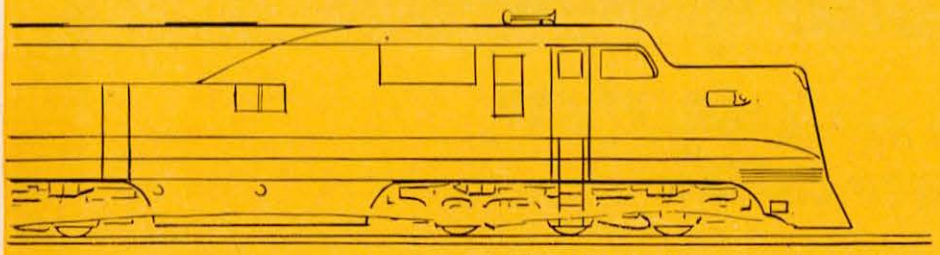


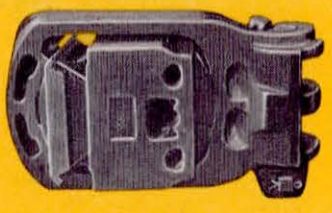
Type M-385 for extremely heavy diesel and electric freight locomotives.



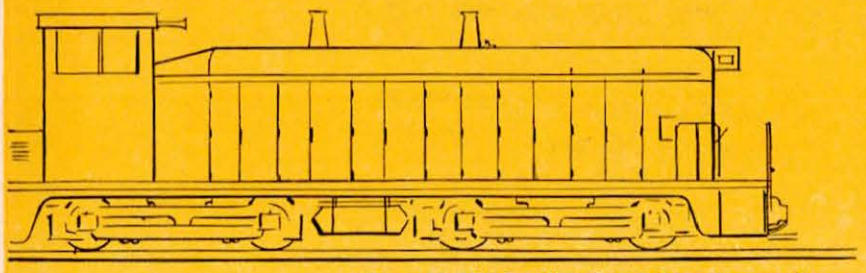


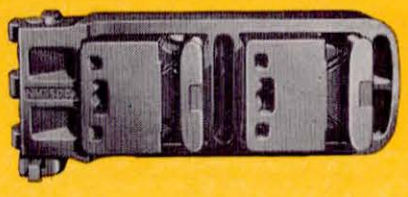
Type M-380 for heavy diesel passenger locomotives and diesel and electric freight locomotives.





Type M-350-A for diesel passenger locomotives.





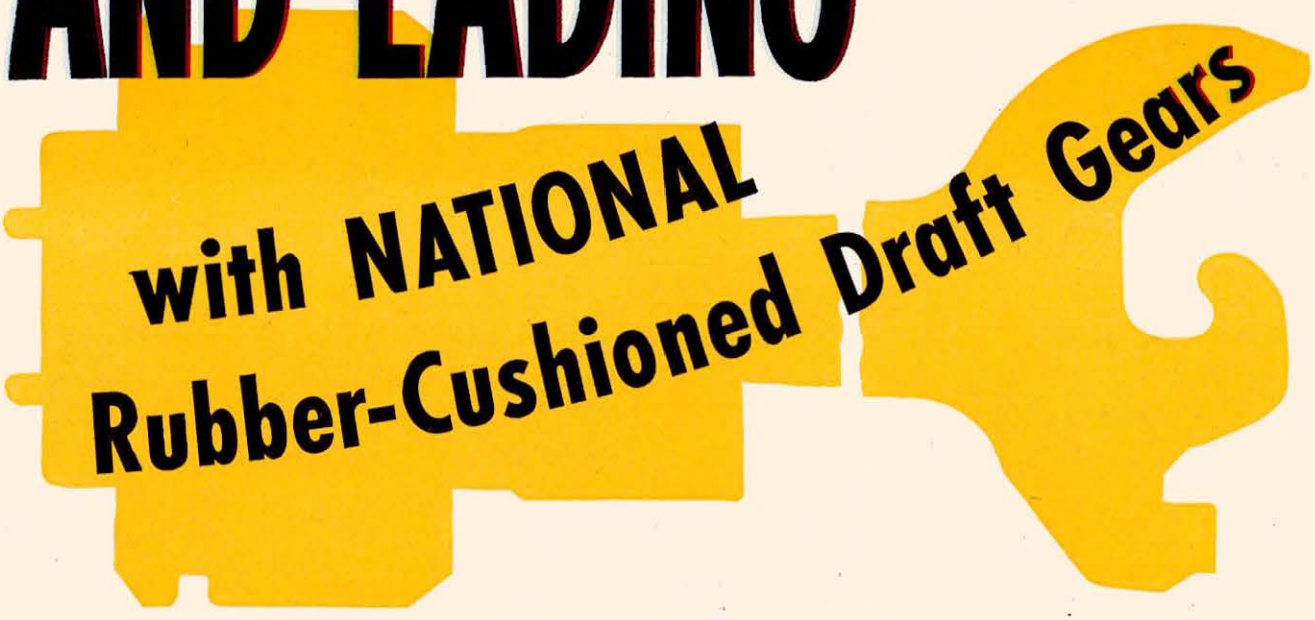
Type M-375 for diesel switching locomotives.

NATIONAL MALLEABLE AND

TRUCKS • COUPLERS • YOKES • DRAFT GEARS

AND LADING

with NATIONAL Rubber-Cushioned Draft Gears



NATIONAL Rubber-Cushioned Draft Gears enable you to take advantage of the power of modern diesel and electric locomotives. That's because of:

No tendency to creep under sustained tractive force, yet continuously responsive during starting, stopping and running.

Soft acting under slowly applied loads with great reserve of cushioning capacity under shock or impact.

Low maintenance costs result from the effective over-all design and long-life construction of NATIONAL Rubber-Cushioned Draft Gears. They are recognized for their important advantages in operation and maintenance. For your diesel and electric locomotives, specify NATIONAL Rubber-Cushioned Draft Gears.

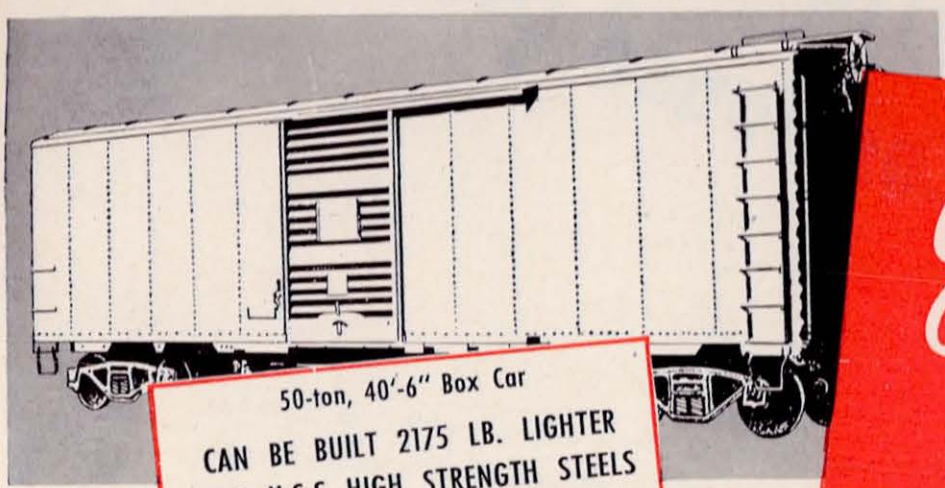
NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY
Cleveland 6, Ohio

STEEL CASTINGS CO.

• JOURNAL BOXES

NATIONAL *Products*
FOR TRANSPORTATION AND INDUSTRY
M&S Co.
Est. 1868

NOW- better, lighter, "economy-engineered"

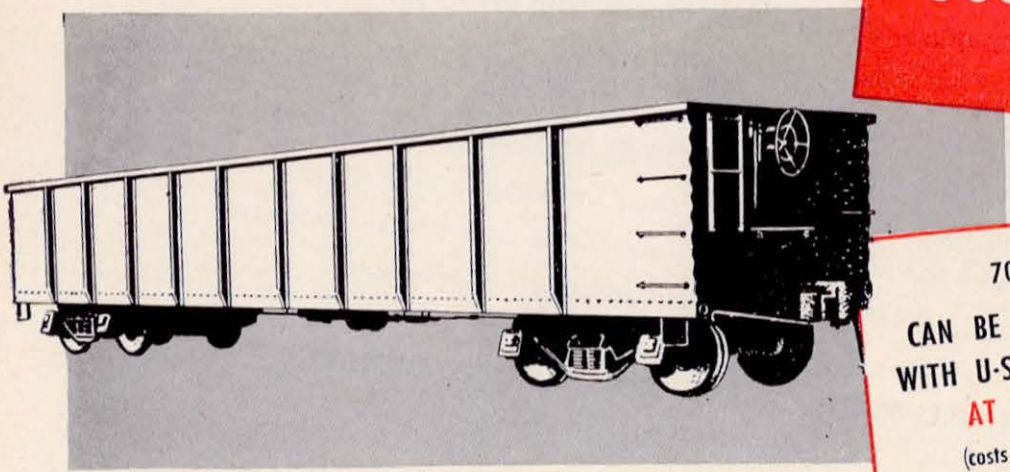


50-ton, 40'-6" Box Car

CAN BE BUILT 2175 LB. LIGHTER WITH U-S-S HIGH STRENGTH STEELS AT LOW MATERIAL COST

(cost only $13.12 more for materials than standard AAR car.)

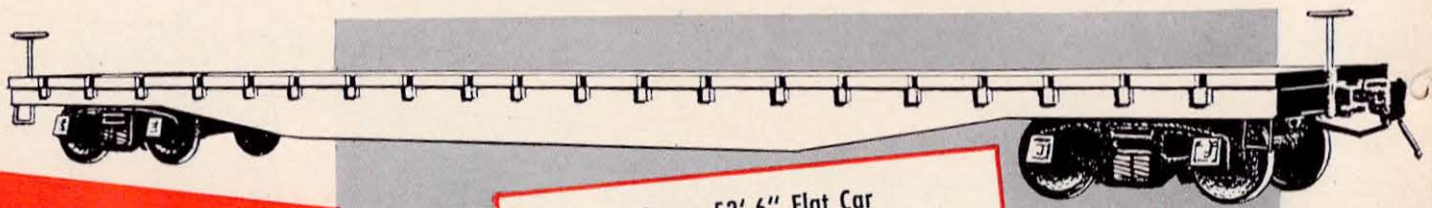
good news for car buyers!



70-ton, 52'-6" Gondola

CAN BE BUILT 3786 LB. LIGHTER WITH U-S-S HIGH STRENGTH STEELS AT LOW MATERIAL COST

(costs only $10.06 more for materials.)



50-ton, 53'-6" Flat Car

CAN BE BUILT 3161 LB. LIGHTER WITH U-S-S HIGH STRENGTH STEELS AT LOWER MATERIAL COST

(actually cost $32.69 less for materials.)

cost-cutting freight cars to reduce car building costs!

Here's a way to reduce your costs all along the line.

"Economy-engineered" construction with U·S·S HIGH STRENGTH STEELS keeps car building costs down, reduces weight to reduce operating costs, increases durability to reduce maintenance costs.

UNDER present conditions, railroad management has justifiably become extremely cost conscious. For that reason we believe that railroads and car builders will be interested in a thoroughly practical means of reducing car building costs. Especially so when such cost reduction *does not* decrease life expectancy, insures reduced maintenance costs and in addition provides the proved operating advantages of lightweight construction.

These highly desirable results have been obtained by the engineers of our Railroad Research Bureau who have developed new, more economical methods of applying U·S·S HIGH STRENGTH STEELS in freight car construction. To reduce material costs, each of these steels is used where its specific properties will do the most good, yet at the same time, ample section thicknesses are maintained throughout so that high resistance to destructive forces is assured.

This economy-engineered construction has three advantages, all of which will save you money, namely: (1) It trims off hundreds of pounds of dead weight, which will reduce your operating costs. (2) It ensures high strength and durability in the car structure which pays off in materially reduced maintenance, the cost of which is constantly rising. (3) It lowers construction costs so that these more efficient, money-saving cars *often cost less* than conventional, heavy equipment.

• • •

If you want *more* and *better* cars for your money—cars that keep initial costs low and cost less to operate and less to maintain than heavy, conventional equipment—contact our nearest district office. Our engineers will be glad to make suggestions on your particular problems.

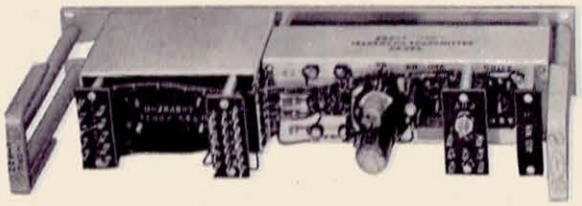
AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

9-1682

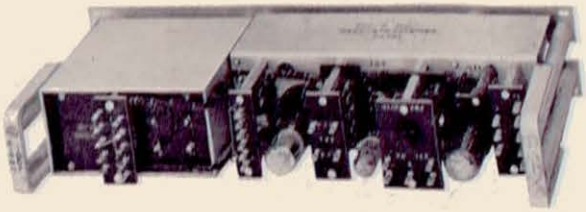
U·S·S HIGH STRENGTH STEELS

U·S·S COR-TEN · U·S·S MAN-TEN · U·S·S MANGANESE-NICKEL-COPPER

UNITED STATES STEEL



22A-T Lenkurt Telegraph Transmitter Panel. Multi-section filter is shown in case at left.



22A-R Lenkurt Receiver Panel. Note wiring is easily accessible from the front.

Here is MULTIPLE CHANNEL free from

The Lenkurt Type 22 Telegraph system provides innumerable combinations, six of which are listed below. One or two channels can be initially installed, and extra channels added as required up to a total of 18 on a standard carrier telephone circuit.

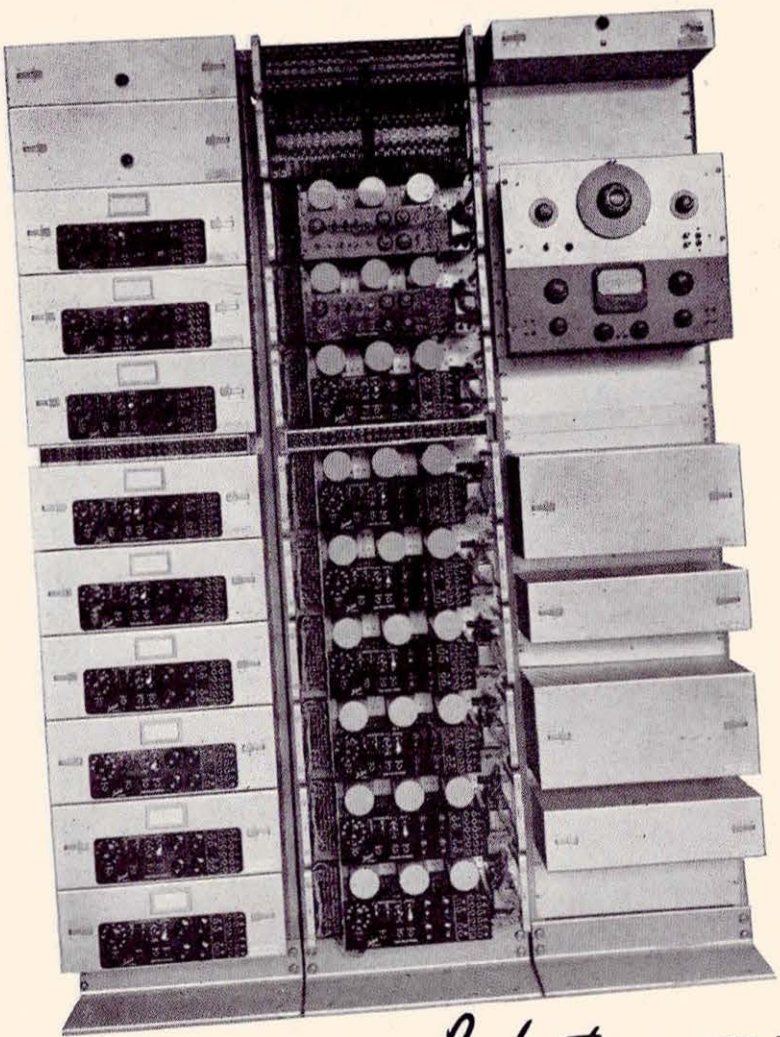
The carrier shift (f-m) type of transmission as used in the Type 22 produces channels remarkably immune to interference.

Lenkurt Type 22 channels can also be operated over a "half-channel" arrangement on conventional 3-channel telephone systems to provide up to 9 duplex channels. Almost all conventional half-duplex or full-duplex combinations of loop operation can be accommodated by the relay panels provided. Panel assemblies are neatly enclosed in dustproof covers and mount on standard 19" racks.

SIX TYPE 22 SYSTEM POSSIBILITIES

WORDS PER MINUTE	MAXIMUM NO. TELEG. CHANNELS	CHANNEL SPACING, CPS.	VOICE CHANNEL BANDWIDTH, CPS.	LENKURT CODE NO.
60	18	120	360-2520	22A
75	14	170	340-2720	22B
120	9	240	420-2580	22A-WB
150	6	340	425-2465	22B-WB
75	2	Speech Plus	1620,1740	22C-1
75	2	Speech Plus	2635,2805	22C-2

FM Telegraph Transmission Atmospheric Interference



Complete 18 channel terminal. 22A-T and 22A-R units mount on rear of rack; relay panels on front.

Lenkurt CARRIER EQUIPMENT

Manufactured for

AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: Automatic Electric Sales Corporation

Export Distributors: International Automatic Electric Corporation

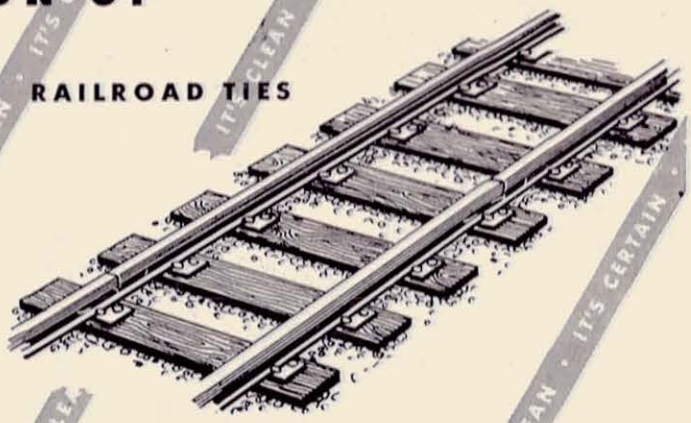
1033 West Van Buren Street, Chicago 7, U. S. A.

1. CLEAN
2. CERTAIN

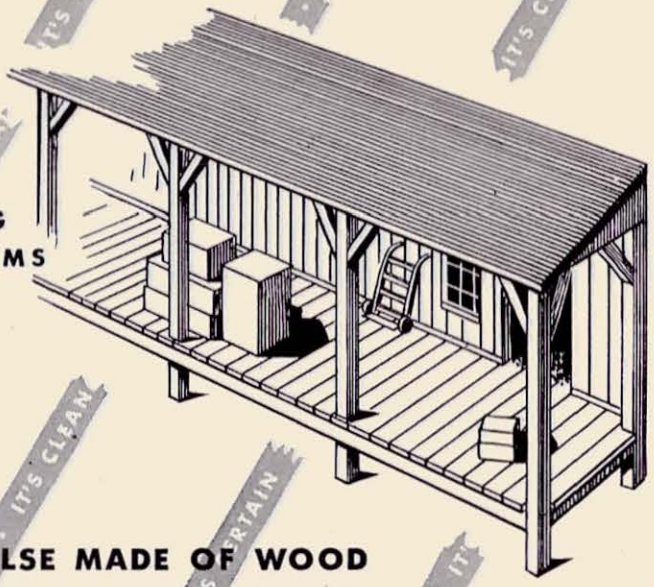
PROTECTION OF

POWER LINE POLES
AND CROSSARMS

RAILROAD TIES



LOADING
PLATFORMS



OR ANYTHING ELSE MADE OF WOOD
SUBJECT TO DECAY OR INSECT ATTACK

WHEN YOU WANT *CERTAIN* PROTECTION, *CLEAN* WOOD, INSIST ON TREATMENT WITH

PENTA PRESERVATIVE

TRADE
CHAPMAN
MARK

CHAPMAN CHEMICAL COMPANY ★ 761 Dermon Building, Memphis 3, Tennessee

CUT HOPPER SHOPPINGS IN HALF

Repair 'em with Alcoa Aluminum!

Over the long haul, it costs far less to repair with aluminum . . . because ALUMINUM LASTS

Like most railroad maintenance jobs, heavy repairs on hopper cars cost more today than ever before—and the cost is still rising. That's bad. But this is good! You can cut your future cost of hopper maintenance 'way down by using Alcoa Aluminum Sheet and Plate for repairs.

On the average, railroads report, heavy metal hopper car sheets in contact with soft coal must be replaced every ten years. Sometimes more often. But experience proves that aluminum alloys will last for the life of the car! The higher cost of aluminum as a material for repairs is only a fraction of the money saved by fewer shoppings. No need to change shop methods. And you get a big bonus in car weight reduction!

Investigate the economics of aluminum for hopper repairs. Our engineers will gladly analyze costs and material requirements for your type of car.

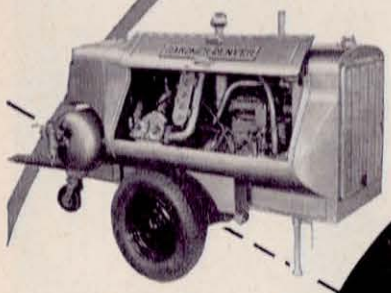
Call your nearby Alcoa sales office, or write ALUMINUM COMPANY OF AMERICA, 2178M Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM ...THE METAL THAT *LASTS*

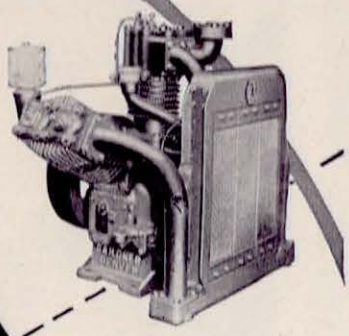
ALCOA ALUMINUM ®

INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT-MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

Quality Construction in a Small Compressor . . . Gardner-Denver Air-Cooled, Tank-Mounted Compressor Outfit.



Air Power Where You Need It — When You Need It . . . Gardner-Denver WH-105 Portable Compressor.



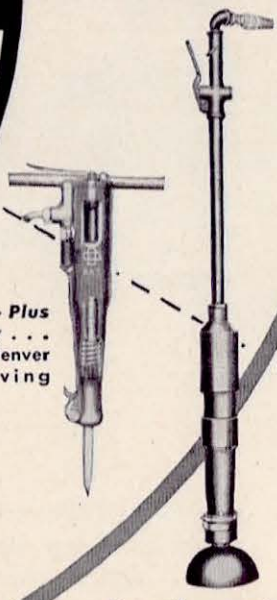
Compact — Smooth-Running . . . Gardner-Denver WX Air-Cooled Compressor.

choose GARDNER-DENVER *Quality*

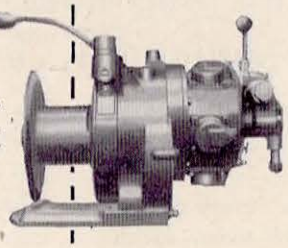
and help your crews do more work — faster

When you have to do the same job with fewer man-hours, it's a relief to know the tools your workmen use will help speed the work — will stay on the job till it's done. That's the assurance you have when you insist on Gardner-Denver *quality-built* compressors and air tools. Write us now for complete information.

Efficient and Dependable Pumping . . . Gardner-Denver VP4 Pneumatic Sump Pump.



Power — Plus Safety . . . Gardner-Denver B87 Paving Breaker.



Smooth, Flexible Hoisting Power . . . Gardner-Denver HB Air Hoist.

Easy digging . . . Gardner-Denver Model 28 Clay Digger.

Rugged — and Easy to Hold . . . Gardner-Denver T23 Backfill Tamper.

Positive Protection . . . Gardner-Denver L012 Line Oiler.

GARDNER-DENVER Since 1859

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada) Ltd., Toronto, Canada

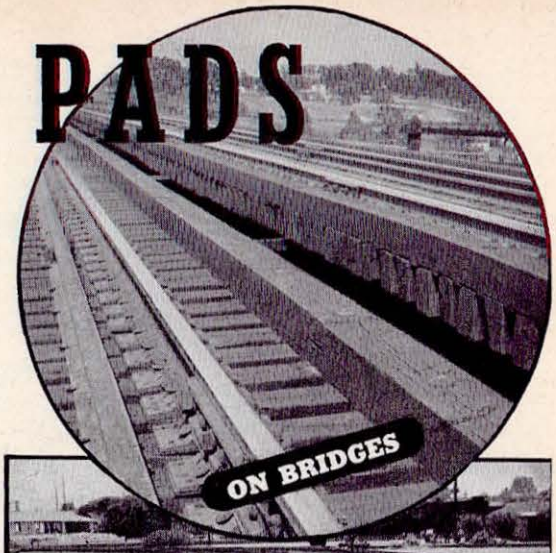
FABCO TIE PADS

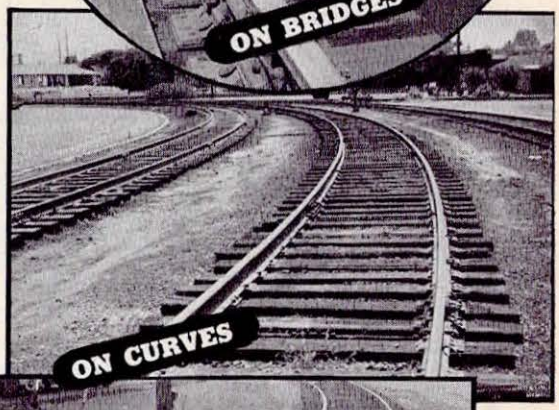
REDUCE MECHANICAL WEAR OF TIES

By reducing the plate cutting of ties Fabco Tie Pads save you money in two ways. (1) They extend tie life. (2) They reduce to a minimum the need for regauging.

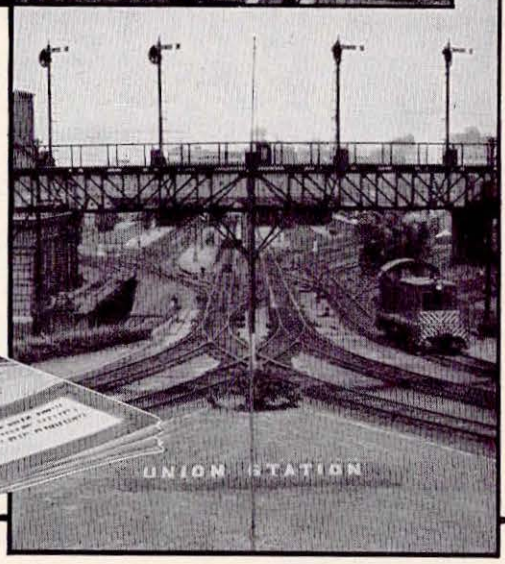
17 REASONS WHY YOU SHOULD USE FABCO TIE PADS

1. Prevent cutting of ties by plates.
2. Extend tie life.
3. Reduce labor costs by less frequent tie renewal.
4. Maintain gauge.
5. Save labor of regauging.
6. Have exceptionally long life — comparable to tie life.
7. Withstand extremes of temperature, moisture, brine, sand.
8. Have great strength under load.
9. Do not squash or crush under extremes of temperature or long service.
10. Permanent resiliency assures tight spikes.
11. Resilient winter and summer.
12. Cushion track structure from impacts.
13. Assist in maintaining line and surface.
14. Large tie plates unnecessary.
15. Compensate uneven bearing surfaces.
16. May be transferred from one location to another.
17. Low pad cost.





and STATION APPROACHES



Made by the Makers of Fabreeka with over 15 Years Experience in Track

FABREEKA
PRODUCTS COMPANY
INCORPORATED

222 SUMMER STREET
BOSTON 10, MASS.

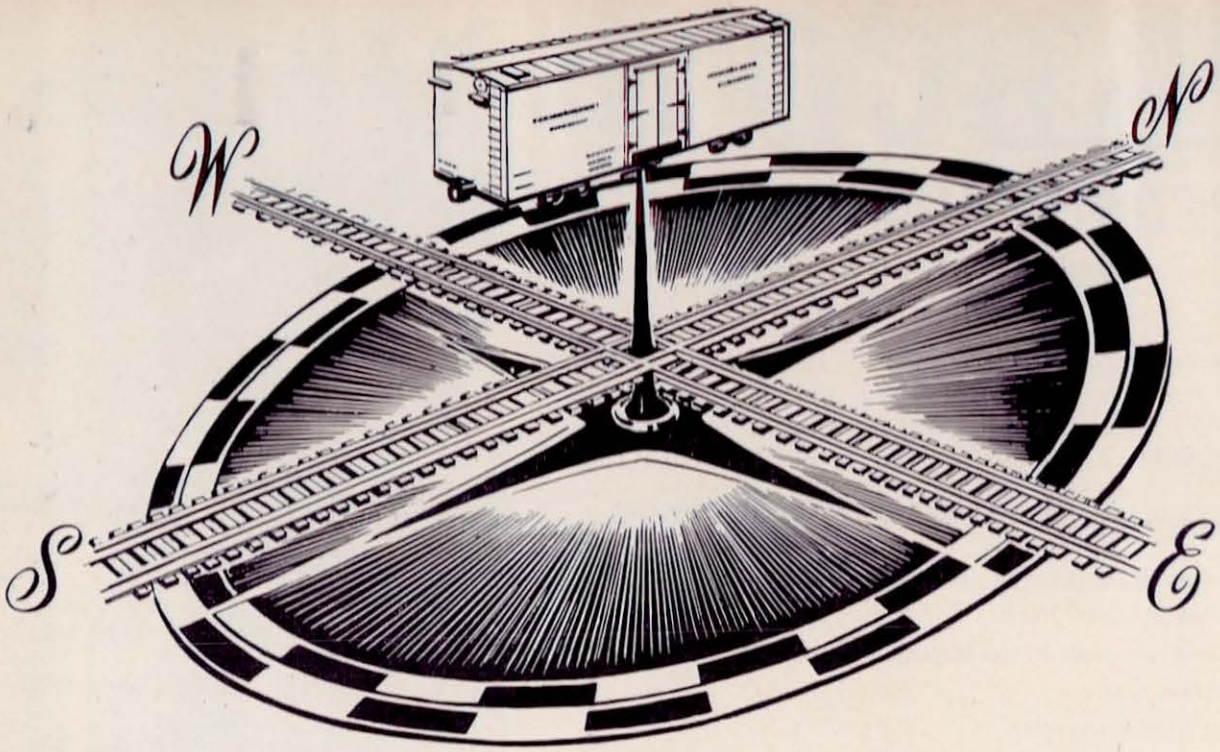
NEW YORK
DETROIT
CHICAGO
PHILADELPHIA
SPARTANBURG
OAKLAND

Please send me latest Fabco Tie Pad literature.

NAME.....

FIRM.....

ADDRESS.....



Efficient under *all* conditions!

A refrigerator car insulated with STREAMLITE HAIRINSUL is efficient — this is true no matter at which point of the compass it may be located — in frigid mountains or on torrid plains... on long hauls or yard "humps".

Leading refrigerator car builders have been specifying all-hair insulation for nearly half a century — and they find today that STREAMLITE HAIRINSUL, with its 40% less weight, is the most efficient and economical.

Highlights of the major advantages gained by using STREAMLITE HAIRINSUL are given below — write for complete data.

LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

Dept. H912 Merchandise Mart Chicago 54, Ill.

A VERY MERRY CHRISTMAS AND A HAPPY NEW YEAR TO YOU!

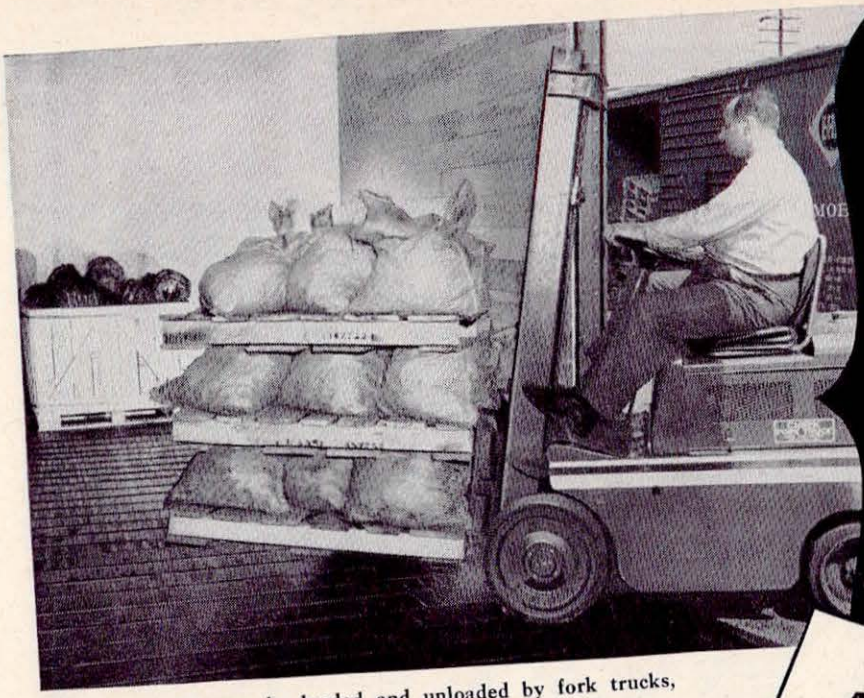
FLANNERY BOLT COMPANY
BRIDGEVILLE • • PENNSYLVANIA

Action at Cajon Pass!

FAIRBANKS-MORSE

Opposed-Piston Diesel Power

on the UNION PACIFIC



"When materials can be loaded and unloaded by fork trucks, there is more freight car availability without increasing the number of freight cars. . . . car floors must be stronger to avoid breaking them when using this type of equipment."

—Report of A.A.R. Committee on Storage and Material Handling Facilities at Purchases and Stores Division Meeting, June 1949.

There's FREIGHT PROGRESS, TOO with palletized loading and...

NAILABLE STEEL FLOORING

NAILABLE STEEL FLOORING
A GREAT LAKES STEEL PRODUCT

"The savings in manpower and money are tremendous," the A.A.R. Committee further reported. That's the reason why more and more progressive roads are turning to NAILABLE STEEL FLOORING... either specifying it in new orders or converting present rolling stock.

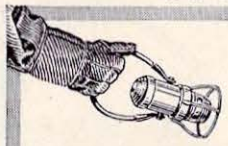
Investigate your losses in repairing or replacing broken wooden floors, in damage suits, in idling cars that can't take modern loading methods . . . and then investigate all-purpose, ever-ready NAILABLE STEEL FLOORING.

YOU SAVE 3 WAYS

In boxcars, flats, and gondolas, the long life of NAILABLE STEEL FLOORING means lower repair and replacement costs and lower operating costs. And because it holds nails tighter and won't splinter, goods are safer on NAILABLE STEEL FLOORING. It saves you money in three ways—in operations, maintenance, and damage claims.

To learn more about the utility and safety of NAILABLE STEEL FLOORS, and how to use them to your best advantage, write directly to us.

49-SF-22 PATENTS PENDING



PUT *MORE* OF YOUR REVENUE BACK WHERE IT COMES FROM... *IN FREIGHT!*

83% of the country's railroad revenue comes from freight. That's one big reason why far-sighted purchasing executives are earmarking more funds for modern flooring . . . NAILABLE STEEL FLOORING.

GREAT LAKES STEEL CORPORATION

Steel Floor Division • Penobscot Bldg. • Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION

Pay Day for 1948

—By Hungerford

Watch for other railroad cartoons by Mr. Hungerford

A cut of suitable size may be obtained at cost by anyone wishing to reproduce the above cartoon.

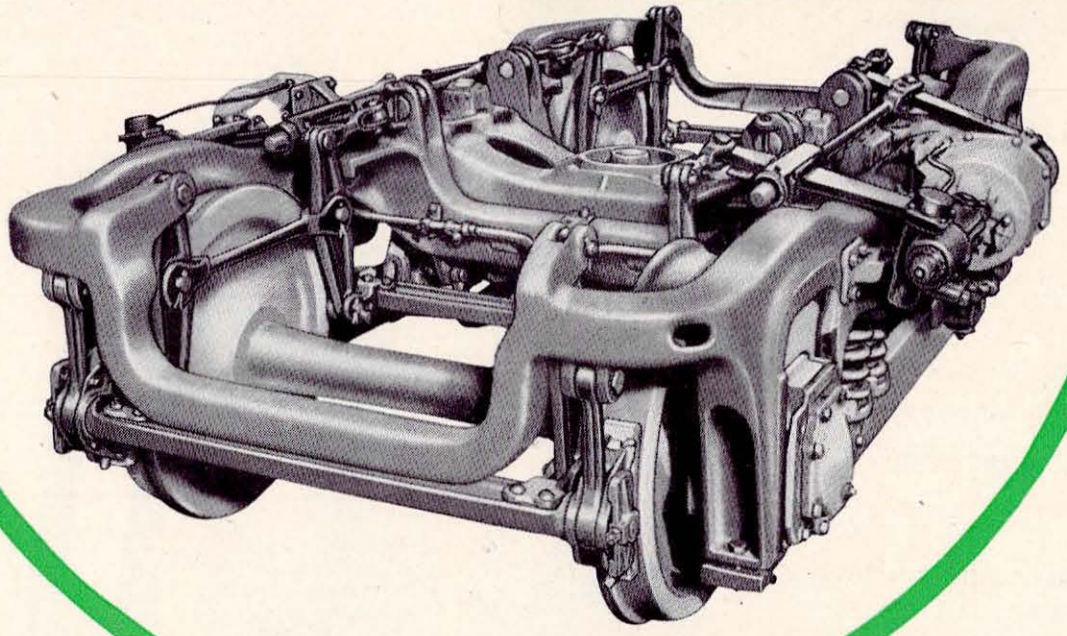
Address requests to:

Edgewater Steel Company
P. O. Box 478, Pittsburgh 30, Pennsylvania.

Gives you

SAFE SHORT SURE STOPS

Nothing Finer can be said about Brakes!



SIMPLEX

UNIT CYLINDER CLASP BRAKES

"Under Virtually Every Streamliner"

AMERICAN STEEL FOUNDRIES

MINT MARK OF ⬡ FINE CAST STEEL

Modern MAGNUS BEARINGS *Improved*

"TWINPLEX" ALARM JOURNAL BEARING

Gives *"Two-Way"* ADVANCE WARNING

—of High Temperatures in Journal Box

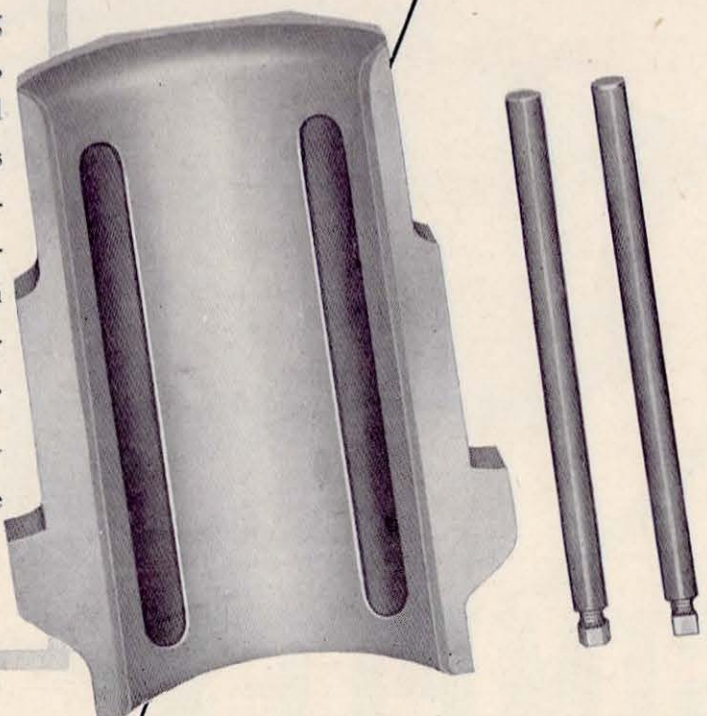
1. a warning you can SMELL

2. a warning you can SEE

The "Twinplex" Alarm Journal Bearing is a certain safeguard against failures resulting from overheated journals.

It is a standard A. A. R. bearing equipped with two brass tubes, each having a small orifice sealed with fusible metal which melts at 350 deg. F. At this temperature, one tube releases a penetrating odor, and the other a dense white smoke, both continuing for about 8 minutes.

This device has proven highly effective under actual service conditions.



SATCO Bearing Metal

MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

2180R

LUXURIOUS TOLEX UPHOLSTERY

YOUR BEST ADVERTISEMENT FOR MORE PASSENGERS

Beautiful, colorful, super-tough TOLEX Plastic Leathercloth for railroad car upholstery, wall covering and trim can be your best advertisement to the public. Passengers remember with pleasure its eye-appealing colors and effects . . . its freshness . . . its cool softness . . . its lush comfort. No longer need they dread the long trip with such luxurious surroundings.

And TOLEX will save you money, too, through its outstanding ability to really take it! This long-wearing material can be used right down to the floor because of its extreme resistance to scuffing and abrasion. It's water-proof . . . stain-resistant . . . easy to keep clean . . . can be made fire-resistant. Write for samples and more details. Textileather Corporation, Toledo, Ohio.

TOLEX CAN TAKE IT!*

MORE THAN 35 YEARS OF PUBLIC ACCEPTANCE

TEXTILEATHER*

NOT LEATHER

**Reg. U. S. Pat. Off.*

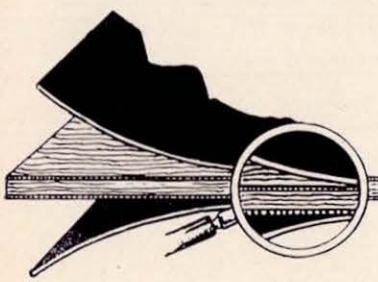
THE *Beauty* OF MET-L-WOOD IS ALL *Practical*

METAL BONDED TO PLYWOOD

Above: Women's powder room in one of the de luxe coaches built by A. C. F. for the new "Eagles". Doors and partitions are MET-L-WOOD.

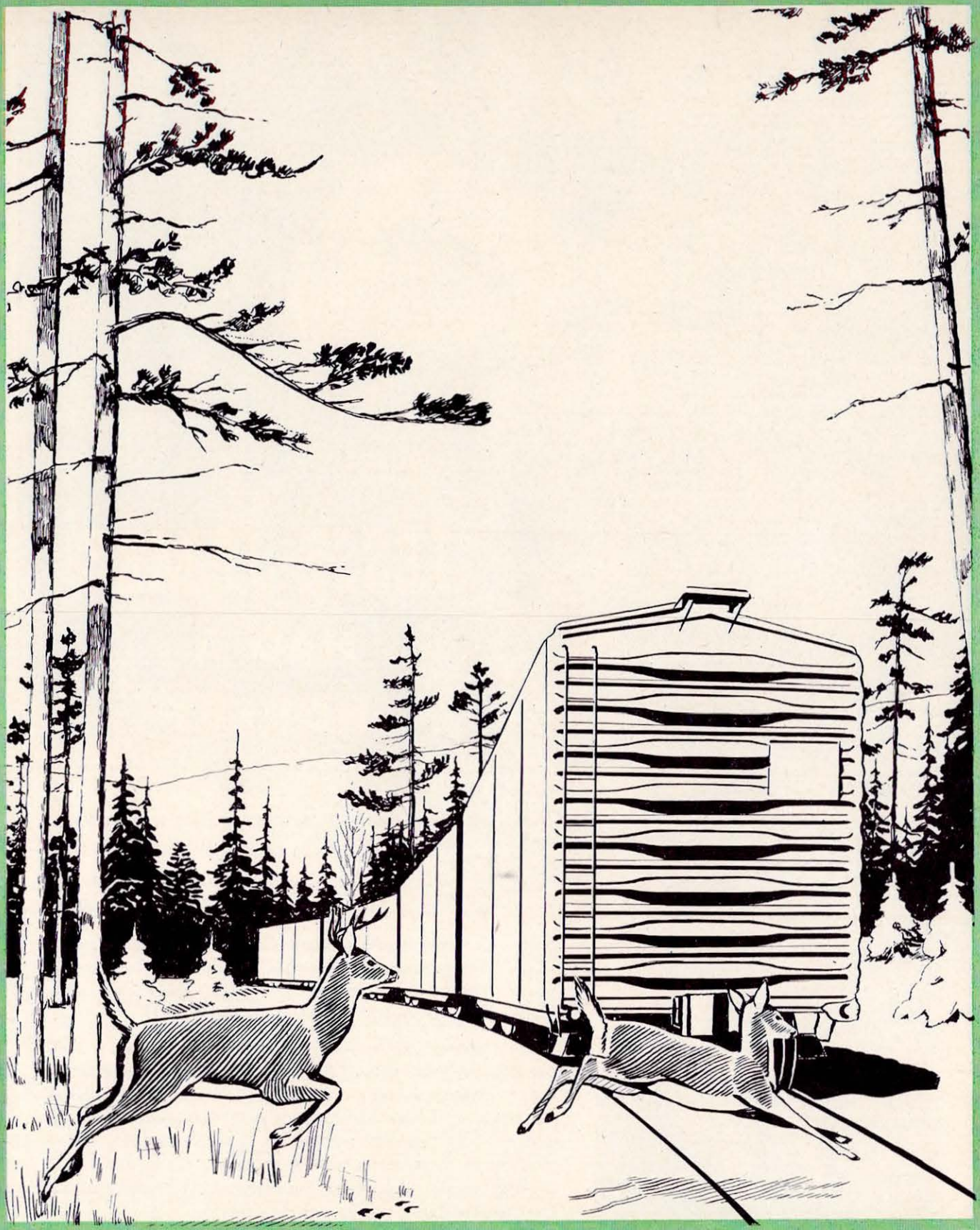
Contributing to the luxurious beauty and overall efficiency of the new Missouri Pacific–Texas & Pacific "Eagle" trains, the use of MET-L-WOOD for exterior sheathing and doors of the Diesels, and for panels, partitions, doors, and interior details in the cars produces multiple advantages: it reduces dead weight . . . improves appearance . . . increases longevity . . . cuts cleaning costs . . . saves maintenance . . . helps achieve a lower center of gravity.

MET-L-WOOD deadens sound . . . damps vibration . . . resists fire.



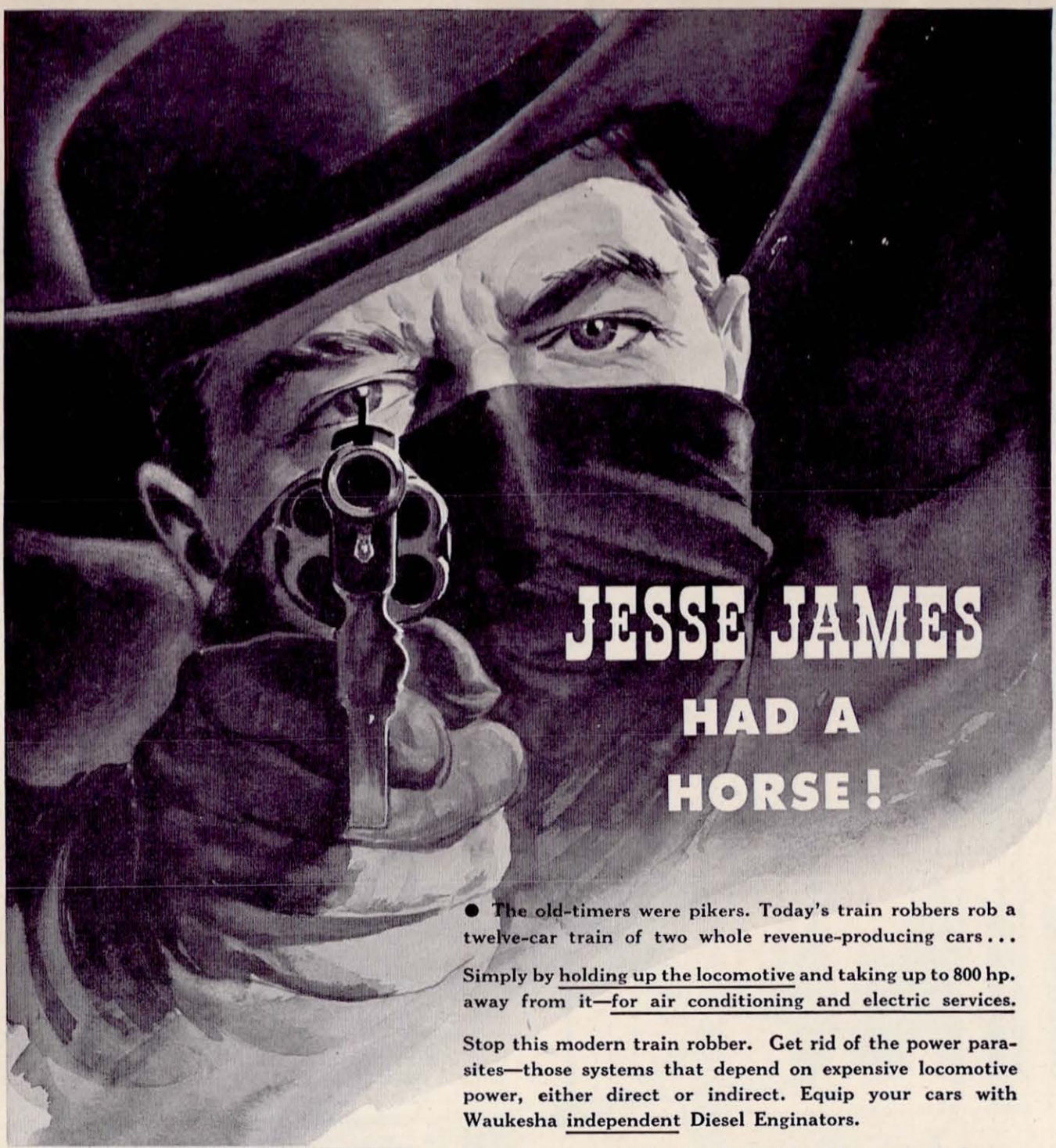
MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois



Holiday Siding

Season's Greetings from Standard Railway Equipment Mfg. Co.
310 North Michigan Ave., Chicago • 247 Park Ave., New York



JESSE JAMES HAD A HORSE!

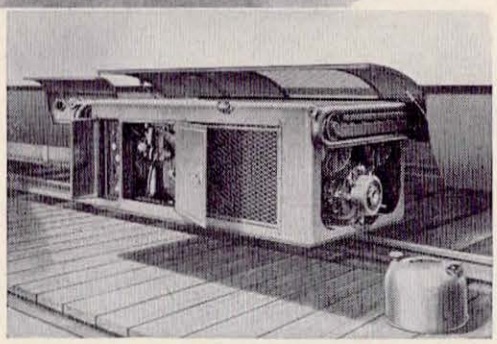
● The old-timers were pikers. Today's train robbers rob a twelve-car train of two whole revenue-producing cars . . .

Simply by holding up the locomotive and taking up to 800 hp. away from it—for air conditioning and electric services.

Stop this modern train robber. Get rid of the power parasites—those systems that depend on expensive locomotive power, either direct or indirect. Equip your cars with Waukesha independent Diesel Enginators.

There's no parasite load—all the Diesel locomotive's horsepower is available to pull the train. Waukesha Diesel Enginators completely take over—supply all the power needed for modern deluxe air conditioning, emergency heating and all other electric services on demand, entirely independent of locomotive, train movement, car location and standby service. And they burn the same Diesel fuel as your locomotives.

Get all the facts. Send for new deluxe Bulletin 1496.



Waukesha Diesel Enginator on tubular track extension, withdrawn for general inspection

WAUKESHA *Diesel* ENGINATORS

RAILWAY DIVISION • WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN
Largest Builders of mobile, engine-driven Refrigeration and Generator Equipment

MAXIMUM PROTECTION

FOR CARS and LADING

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

WESTINGHOUSE

Friction Draft Gear
Certified A.A.R.

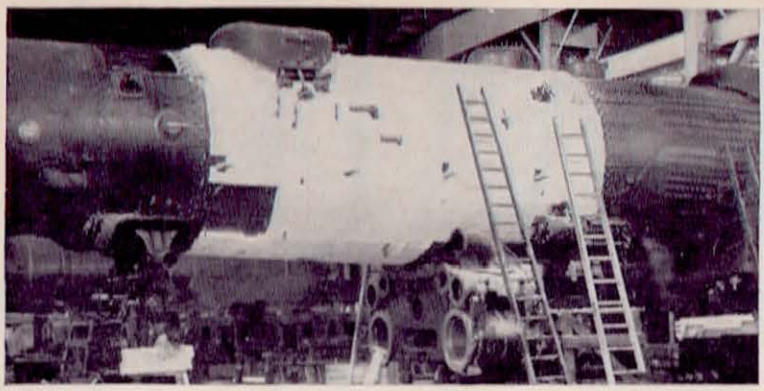
CARDWELL

Friction Bolster Springs
. . . for A. A. R. and
Long-Travel Springs.

2764

Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

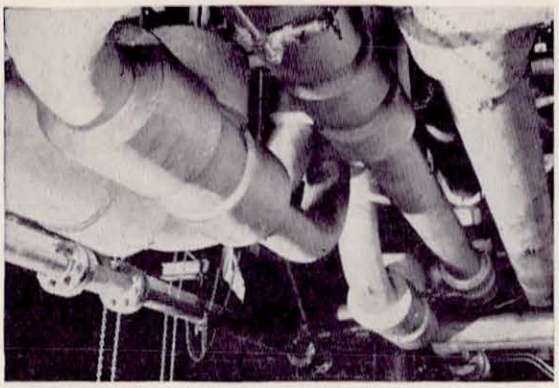


To save on locomotive operation—Use J-M 85% Magnesia Locomotive Boiler Lagging. Combines high insulating value with light weight and the ability to retain its efficiency in service. Furnished in various thicknesses, curved or flat, straight or tapered, to permit snug fit to boiler surfaces.

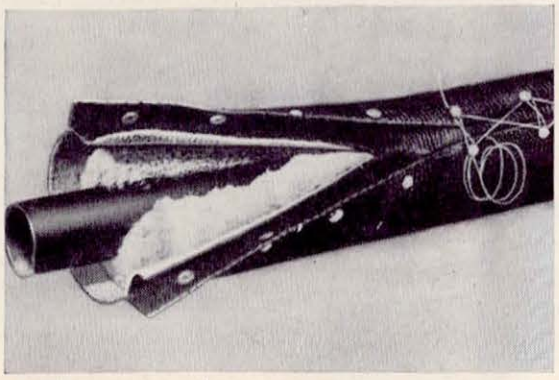
...there is a type for every railroad requirement...

Johns-Manville manufactures many types of insulations for railroad use...for refrigeration cars, cold-storage rooms, tank cars, air-conditioning systems, locomotive fire-boxes, soundproofing. In addition, the completely equipped Johns-Manville Insulation Laboratories are available to help you find answers to new insulation problems. For further details, write Johns-Manville, Box 290, New York 16, N. Y.

To save on passenger car operation—Insulate with J-M Stonefelt blankets for permanently high thermal insulation efficiency, lower air conditioning costs over the years. Stonefelt retains its rated thickness . . . won't settle with vibration. In addition, it is both fire- and moisture-resistant.



To save on power plant operation—Use 85% Magnesia, the most widely used insulation for steam lines up to 600° F. Light in weight, uniform in composition, it keeps fuel costs low, provides dependable insulation that often outlasts the installation.

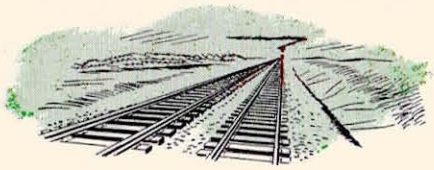


To save on train operation—Use J-M Train-Line Insulations for steam piping, and hot and cold water and air-conditioning lines. Made of materials that maintain high efficiency under severe conditions of moisture and vibration and temperatures up to 450°F.

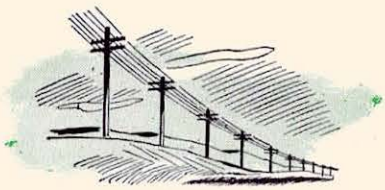
Johns-Manville

91 YEARS OF SERVICE TO TRANSPORTATION

Let's Check The Proved Facts About Wood Preservation!



The proved *facts are simple . . . and well-established.*



THE FIRST PROVED FACT is that Coal-tar Creosote is the only wood preservative that has proved successful for more than 100 years under practically all conditions.

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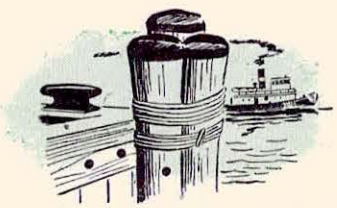

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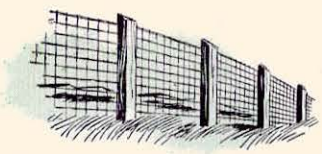

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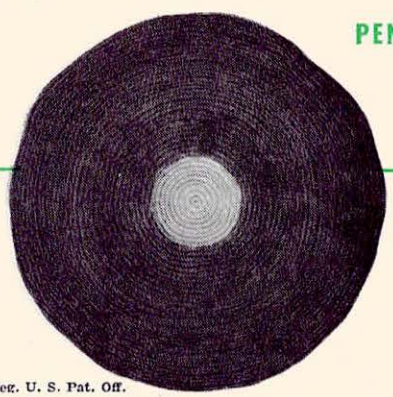

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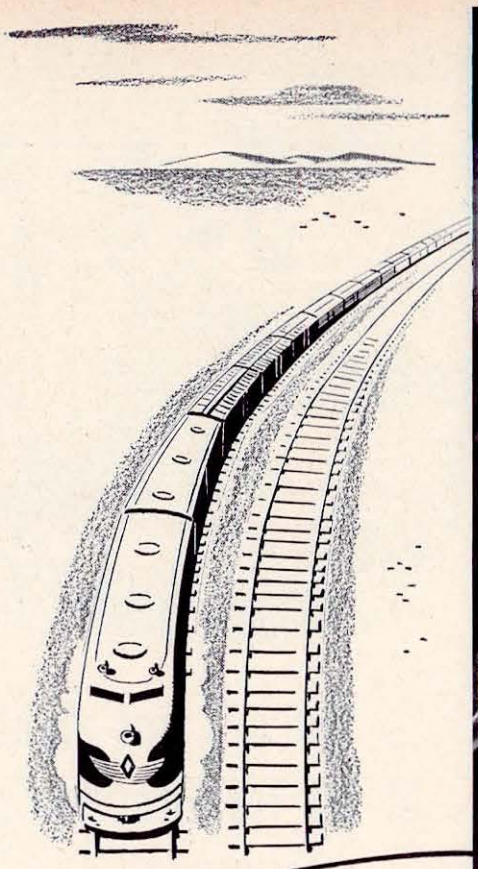

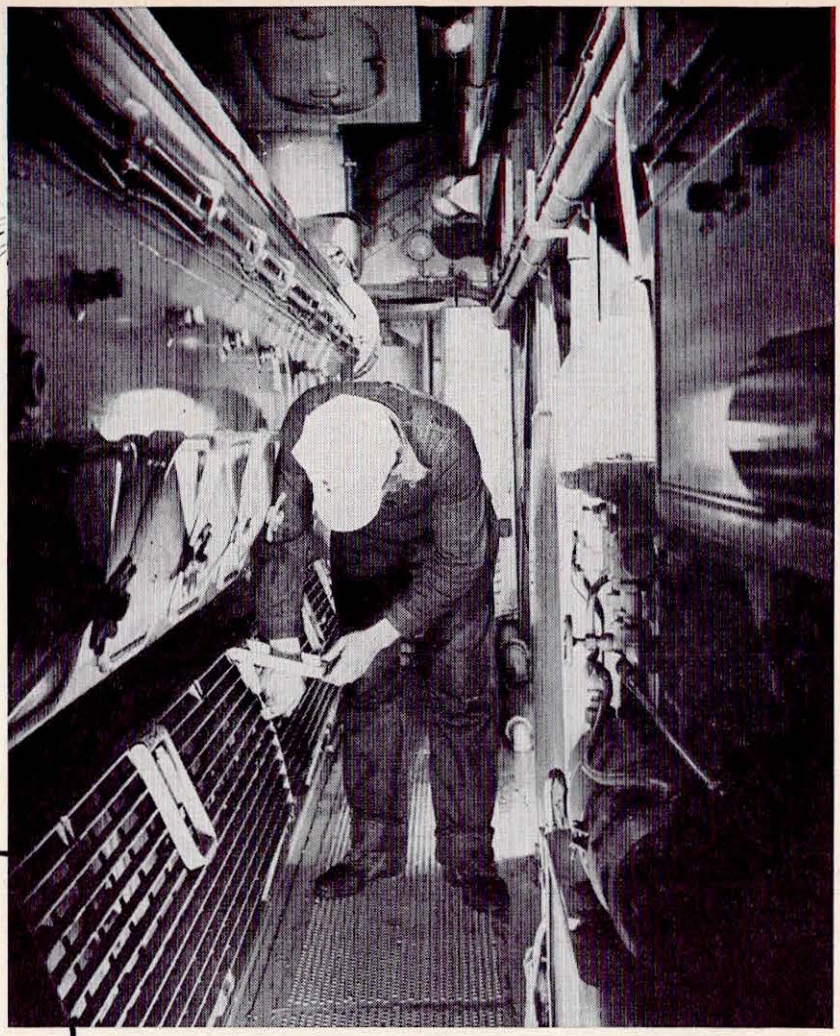

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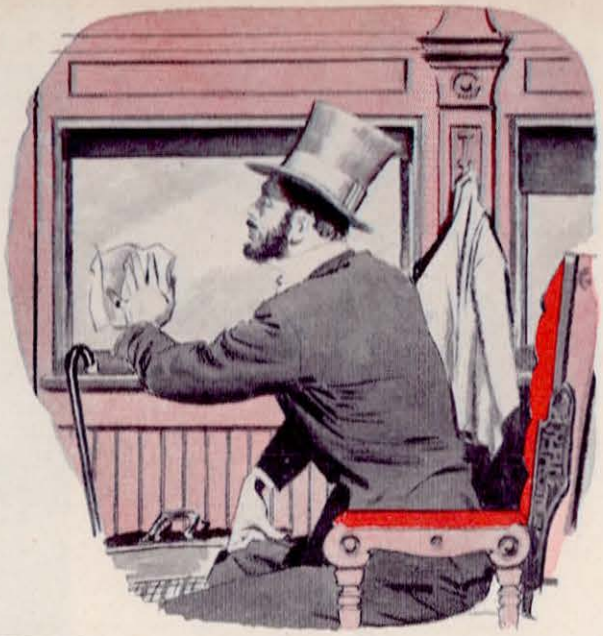

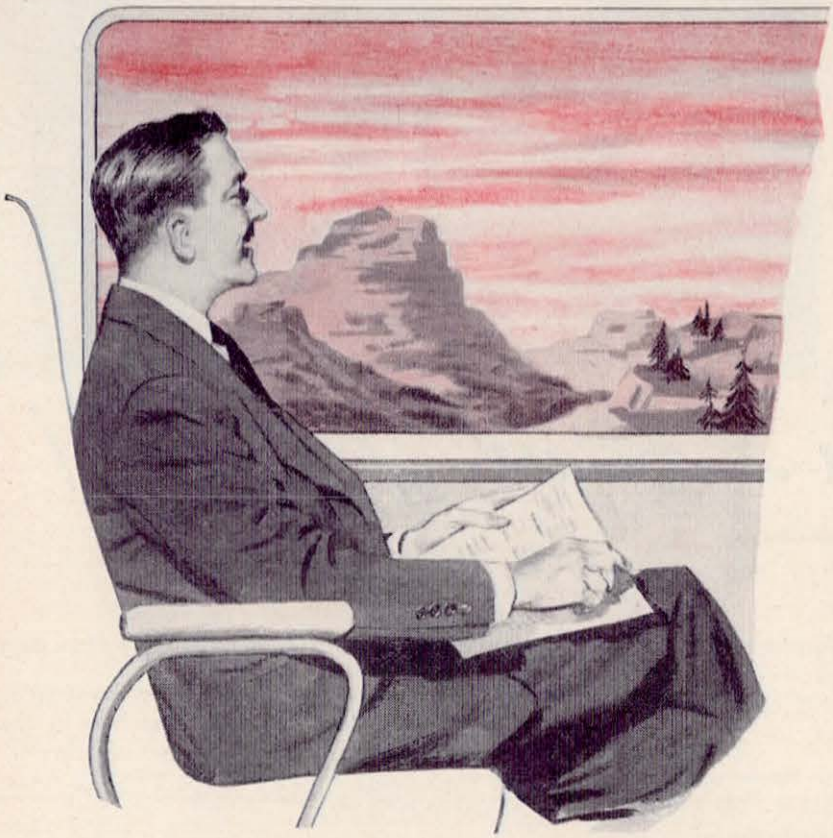

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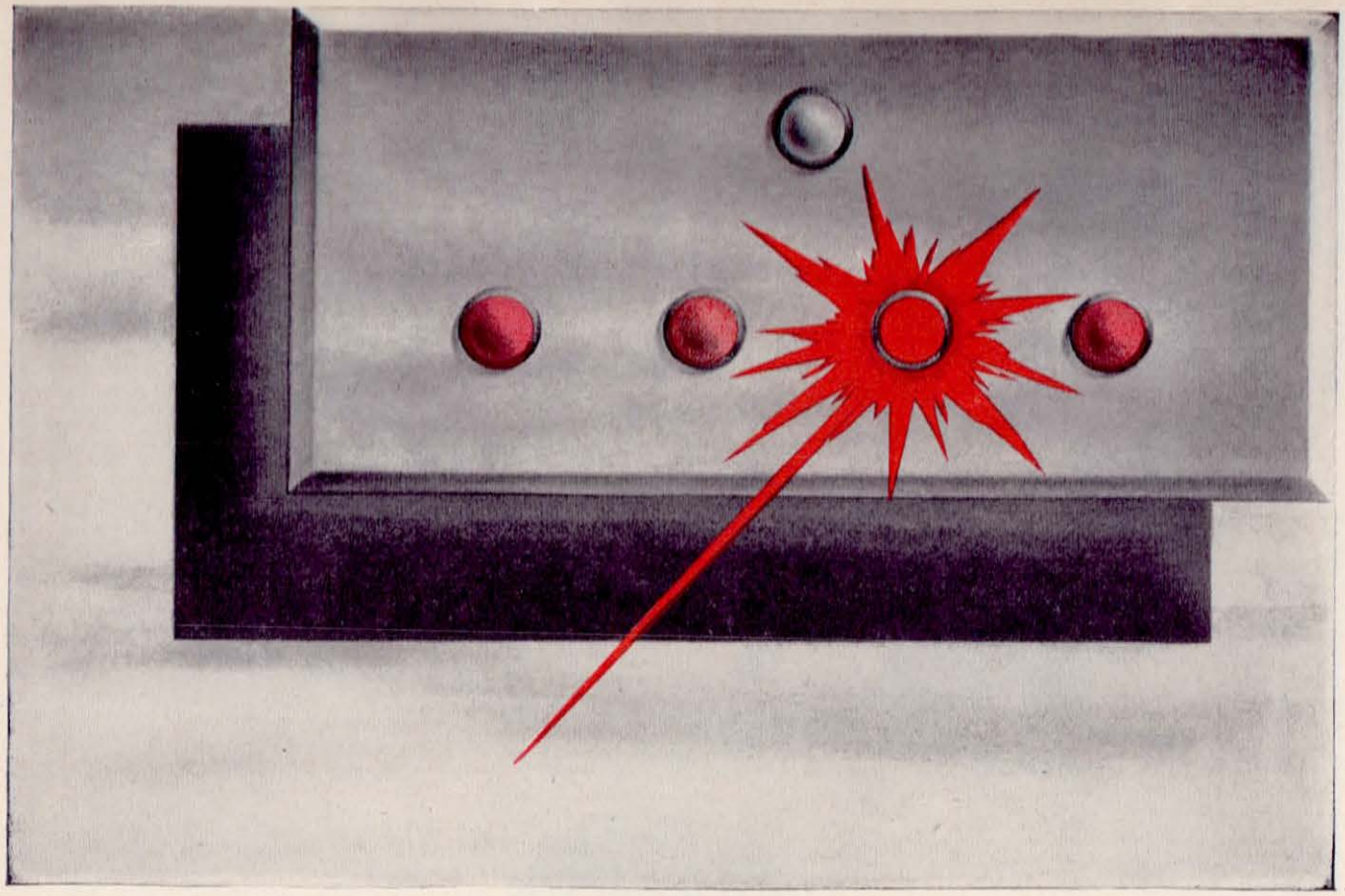

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Vol. 127, No. 25 December 17, 1949

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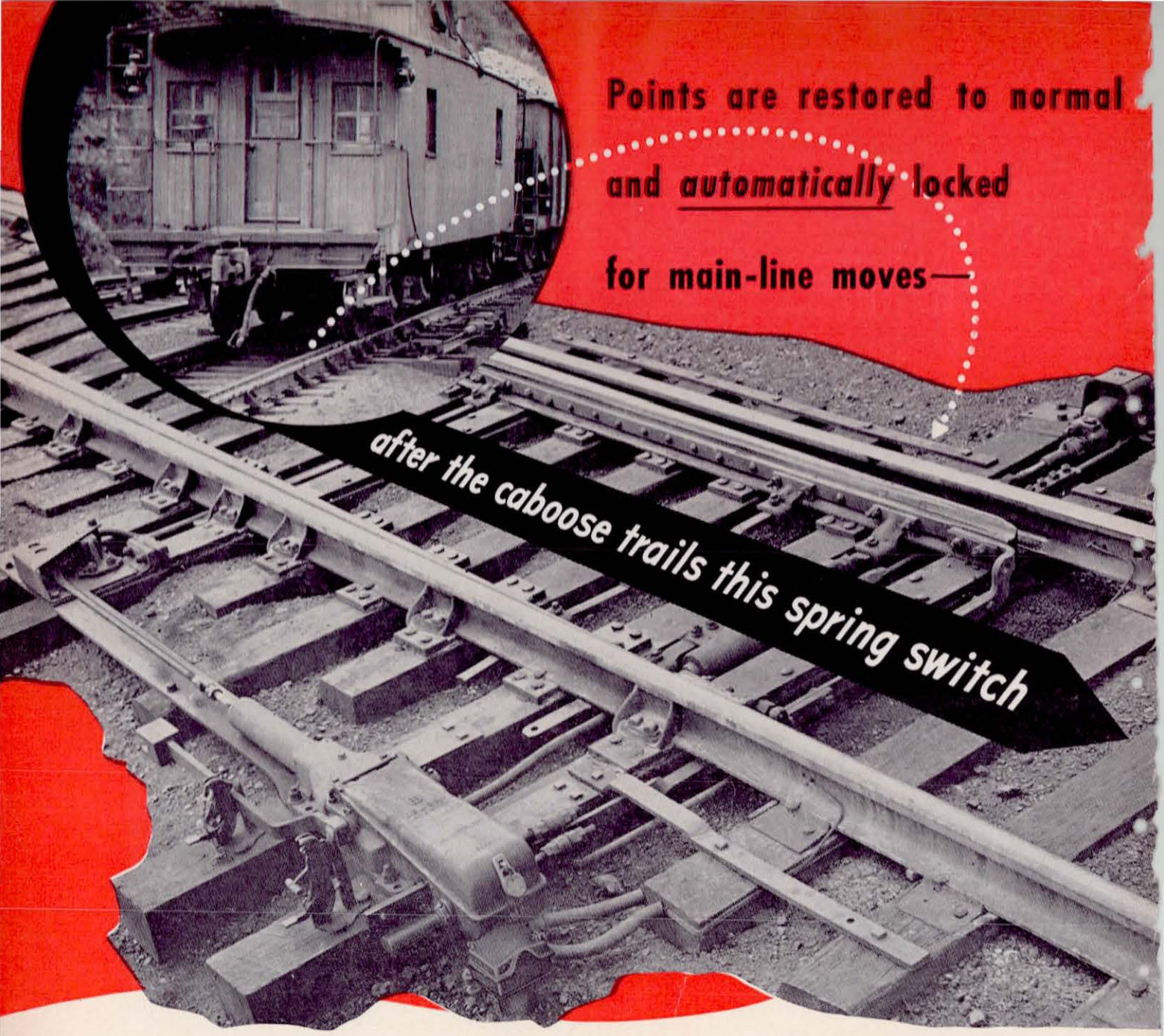
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and automatically locked
for main-line moves—
after the caboose trails this spring switch

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WEEK AT A GLANCE

THE SAWYER REPORT: Starting on page 51 is a summary of the report on "major policy issues" in transportation presented early this week by Secretary of Commerce Charles Sawyer to President Truman in line with the latter's request of last August 30. Some of the report's recommendations, such as the one for user charges on government-provided transportation facilities, should meet with approval from all except the immediate beneficiaries of such facilities. But it is difficult to follow the reasoning behind some other suggestions in the report, e.g., possible repeal of the Bulwinkle-Reed Act. Our News pages, incidentally, report that the National Association of Railroad and Utilities Commissioners has just urged a Congressional committee *not* to repeal that law.

GORDON OF THE C. N.: The presidency of any big railroad is a man-sized job. And when that railroad spans a continent with a network of heavy-traffic main lines and light-traffic branches, and operates many related facilities, as does the Canadian National, the job assumes herculean proportions. The man who has held that job for nine years, Robert Charles Vaughan, will retire on January 1, to be succeeded by Donald Gordon—a newcomer to the railroad industry, but one who has already demonstrated his outstanding ability in other fields. Profile sketches of both men, and a necessarily simplified outline of C. N. problems faced by Mr. Vaughan and to be faced by Mr. Gordon, begin on page 60.

BENCHMARK: September was the first full month of the 40-hr. week and of the full Ex Parte 168 rate increase. Results for that month are analyzed, as a benchmark for the immediate future, in the editorial on page 47.

RAILWAY ENGINEERING TRAINING AT LOW EBB IN COLLEGES: An analysis by Paul J. Claffey, civil engineering instructor at Catholic University, shows that railway engineering education is at a low level in American colleges, with few institutions offering any courses in that field beyond route surveying. Mr. Claffey's analysis appears on page 54.

ADVANTAGES OF DYNAMIC BRAKING: Beginning on page 57, J. P. Morris, assistant to vice-president of the Atchison, Topeka & Santa Fe, reports on tests of dynamic braking run by his company in both freight and passenger service, which show economies related to wheel and brake shoe wear.

PROPER CAR SELECTION CAN CUT FREIGHT DAMAGE: Has enough consideration been given to the part played by car condition in causing loss and damage to freight? Probably not, because it is easy to underrate things that can't be easily or exactly evaluated. But there is reason to believe that equipment failures and defects may have been directly responsible for claim payments of more than $10 million in 1948. The subject is discussed from the viewpoint of loss and damage prevention forces in the article beginning on page 48, which includes a list of five practices which must be followed more thoroughly if the maximum possible prevention of loss and damage due to defective equipment is to be achieved.

CHRISTMAS SHOPPING: A number of Class I railroads have been doing some Christmas shopping, with the result that our Equipment News columns report orders for 116 Diesel-electric locomotive units, 3,100 freight cars and 30 passenger-train cars. Atlantic Coast Line and Burlington were the largest individual buyers.

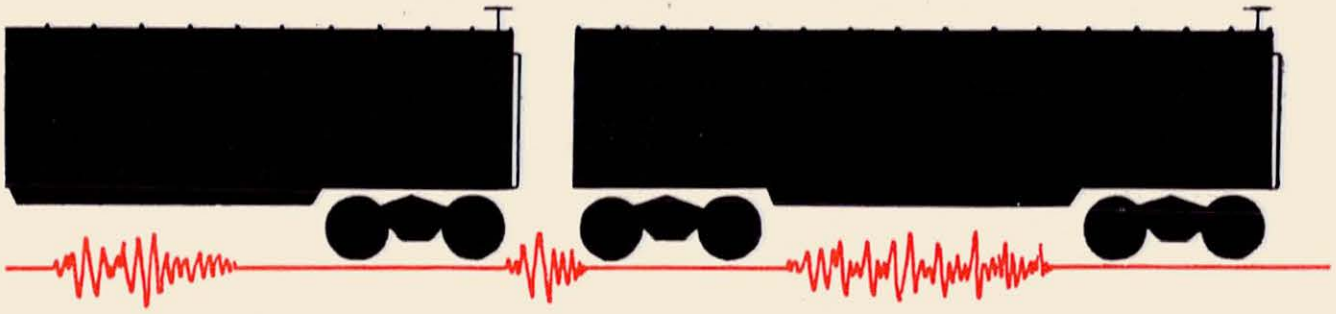
LET THERE BE LIGHT: A short article and picture, on page 63, tell about the new lighting in the Denver & Rio Grande Western's main offices—an installation which has resulted in better work as a result of reduced eyestrain and general fatigue.

WHAT ARE THE RAILROADS FOR? The railroads' program for equality of treatment with their various competitors is *not* a negative effort designed solely to have such competitors restricted as the railroads themselves are restricted. But those competitors who want to keep their present advantages over the railroads have no scruples about putting that misleading and erroneous interpretation, whenever they can, on the railroads' efforts to present their own case to the public. Actually, it is not only possible but easy to interpret the railroads' situation wholly in terms of the public interest—and that is probably the only really effective way to interpret it. A summary of such an interpretation is given in our leading editorial, page 45.

GETTING WORRIED? The railroads' constant hammering at the unfairness of handing out lavish subsidies to their competitors must be getting results. At any rate, 53 major truck executives met recently at Chicago to consider a "retaliatory campaign," and Robert Ramspeck, of the Air Transport Association, devoted part of a Chicago Rotary Club talk to criticism of the railroads for trying to get a square deal for themselves. Mr. Ramspeck appears to have been trying to ride two horses; at one point in his talk he denied that air lines have hurt the railroads, and then boasted about how much first-class travel now goes by plane. Also, while denying subsidies, he described a "comprehensive program," under which the government will help the air lines achieve "safety, dependability and regularity"—all of which the railroads achieve for themselves without government aid. "Comprehensive program" may be a nice new term for disguising a subsidy, but "a rose by any other name . . ." For a report of the truckers' meeting and Mr. Ramspeck's talk, see the News.

HOW TO

CALM DOWN BOUNCING BOXCARS:



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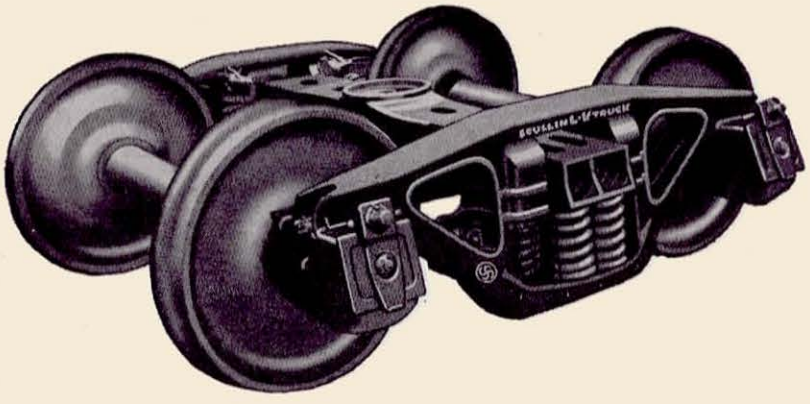

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What Are the Railroads FOR?

A friendly critic of the railroads has made the following observation to this paper: "We all know what the railroads are *against*—such as subsidies, and inadequate regulation of their rivals. What the public wants to know is what the railroads are *for*."

The railroads' position, in relation to rival agencies of transportation, is actually not the negative one of seeking to have their competition restricted. The way the industry's case is stated, however, sometimes permits interpretation in this false light. It is possible, on the contrary, to interpret the railroads' situation wholly in terms of the public interest; and that is probably the only effective way to interpret it. Not many people are interested in anybody's misfortunes but their own. Strictly from the point of view of the public interest, the railroad situation might be summarized somewhat as follows:

In the Public Interest

1. The railroads have not raised in the investment markets any money worth mentioning for improvements and replacements, except for rolling stock and motive power, in the past nineteen years. Their only source of funds for such improvements is their net earnings. But postwar net earnings have been entirely inadequate for this purpose. The industry's net operating income was only $780 million in 1947, a little over $1 billion in 1948, and it will probably be less in 1949 than in 1947. These totals compare with the $1,275 million the industry earned in 1929. The industry's net working capital, excluding materials and supplies, declined from $1.4 billion at the end of the war in 1945 to less than $500 million at the end of August, 1949.

2. The country cannot dispense with the services of its major railroad systems—if only (a) to handle the many commodities and between the points which truck and barge operators are unwilling or unable to serve; and (b) to provide a labor-saving transportation machine with great elasticity of capacity, to take care of the increase in the traffic load in time of military emergency.

3. Plant constantly wears out and must be replaced if the industry is not going to dry up and vanish. Since the railroads are indispensable in peacetime and desperately so in war, they must continue to have money to spend for improvements and replacements. Continuing inability to secure sufficient funds either from earnings or from investors would soon make it necessary to call upon the government to supply the deficiency. This would involve the danger of government ownership, an outcome most Americans would like to prevent.

4. There is no way of guaranteeing the country the continuance of indispensable railroad service, while preventing government ownership, except by greatly improving the net earnings of the railroads—

thereby giving them larger resources for direct investment and/or restoring their credit so that private investors will once again be willing to supply needed funds.

5. The railroads have used the device of rate increases just about as far as they can, in the effort to secure the net earnings which the industry requires in the public interest—and the desired goal has not been achieved. There remains only one other means whereby the required net earnings can be obtained, and that is to make railroad rates more remunerative and more attractive to traffic by *an approach to equalization in the financing, taxation, and regulation of the railroads, in relation to the standards maintained in these spheres for waterway, highway and air transportation.*

6. The "ways" used by barges and trucks are in public ownership and are not taxed as railroad roadway is. This inequality may be remedied either (1) by freeing railroad property, except rolling stock, of all property taxes, or (2) by requiring truck and barge owners to pay the equivalent of property taxes on the public investment in long-haul highways and waterways.

Earnings plus Taxes

7. When a railroad company wishes to improve its service by straightening out its roadway and reducing gradients, it must first earn the cost of the improvement and pay income taxes of 38 per cent on these earnings. Thus, to have $100,000 to spend for such service improvements, the railroads must first earn $161,000 of net income. When a highway is similarly improved, money for the purpose is simply appropriated from taxes and no additional charge devolves upon the beneficiaries of the improvement. This inequality could be remedied in part (1) by levying special tolls on commercial users of modern highways and/or (2) by exempting from income taxation all railway earnings which are reinvested in property improvements. To equalize the financing of railroad improvements with those enjoyed by users of the waterways, it would be necessary either for the federal government (a) to levy tolls for the use of the waterways or (b) to donate to the railroads for capital improvements sums comparable to those expended on the waterways, the benefit of these donations to be passed along in lower rates to railroad patrons. Railroad patrons have just as much right to expect the federal government to help them pay their freight bills as the patrons of barge lines have.

8. Because the railroads have to provide and maintain their own property, they cannot afford to put a heavier load on a piece of track or a bridge than the structure can safely withstand. Since truck operators do not own the highways they use, and since overloading is profitable for those who do not have to pay what it costs, it follows that all highways should be restricted by law or regulation to vehicle weights they can safely withstand; that detection of violation be made reasonably certain; and that penalties be sufficiently severe to encourage compliance.

9. The railroads are expressly forbidden by law to engage in mining, manufacturing and other commercial enterprises—but other commercial enterprises are not forbidden to engage in transportation. Unless the public is willing to apply the "commodity clause" limitation to other business and not to the railroads alone, then—to relieve the railroads from an intolerable competitive handicap—the regulatory law must be changed to enable the railroads to make contract rates or utilize other devices to meet the competition of private and contract carriers, which now have no legal obligation to maintain nondiscriminatory charges. Moreover, the long-haul trucking of agricultural products should either be subject to rate regulation or railroad movement of agricultural products should enjoy a parallel exemption from regulation.

10. The Taft-Hartley Law, which governs the labor relations of all industries except the railroads, expressly forbids "featherbed" practices. The Railway Labor Act, as now interpreted, constantly expands and deepens these practices on the railroads. There can be no expectation that the railroads will approach financial and credit parity with other industries so long as disparity in regulation of comparative labor practices is maintained.

11. When it looks as if the air lines are not making enough money to provide a satisfactory degree of prosperity for them, the federal government simply grants them retroactive increases in payments for carrying the mail. By contrast, the railroads carry 94 per cent of the mail for less compensation than the air lines receive for carrying 6 per cent—a payment which is manifestly below the cost of the service. Moreover, in the face of the railroads' rapid impoverishment, the Department of Justice, so called, is endeavoring to mulct the railroads of a couple of billion dollars for alleged overcharges on wartime government freight. Thus, the federal government, while spending unprecedented billions for the expansion of other agencies of transportation, is endeavoring to *extract from* the railroads similarly unparalled sums. This disparity in treatment, alone, would be sufficient to account for the lack of enthusiasm of investors for committing additional funds to the railroad industry.

Basis for Corrective Action

The railroads can ask for corrective action on the foregoing points not as a favor to themselves, but as necessary in the public interest to forestall further socialization of transportation. It is not necessary to present the railroads' case as a "hard-luck story," without appeal to anyone not already sympathetically

inclined. The situation is, instead, in actual content, one involving the immediate self-interest of every American citizen. The railroads need do no more than gain general recognition of where the selfish interest of the public lies, in order to secure the correction of the worst of their handicaps.

They have, indeed, a case strong enough to invite major concessions, even, on the part of the operators of truck, barge and air lines—not because these rival carriers love the railroads, but because socialization of the railroads would put a definite end to the political advantage these other carriers now enjoy. They would be ahead of the game to make concessions of sufficient magnitude to restore the railroads' earning power and credit rather than let the railroads, also, get a pipeline into the public treasury. When and if that happens and it thus becomes possible for any pressure group to get lower railroad rates simply by voting for them—how long do the barge and long-haul truck operators think they are going to enjoy their present share of the nation's traffic volume?

THAT SIGNIFICANT SEPTEMBER INCOME FIGURE

The $63.5 million of net railway operating income earned by the Class I railroads in September was a great deal better than might have been expected. That month, for which adequate statistics have just become available, was the first in which the 40-hr. week for non-operating employees was effective. Since it was also the first month in which the latest advance in freight rates was effective—3.7 per cent on September 1—the September statistics may be considered a benchmark from which to evaluate the immediate future.

Net operating income is what the railroads have left, after expenses and taxes, to pay their creditors and owners and—more important to the public—to spend for improvements to their properties. For many years railroad purchases from manufacturers have followed very closely the trend of net operating income. Despite the fact that total operating revenues were less in September than in any previous month of the year, except February, net operating income was substantially higher than in five previous months, and slightly below that of the remaining three. The ratios of September's operating revenues and net operating income to those of previous months in the year are shown in the table.

Month	Percentage Sept. Operating Rev. to that of Earlier Months	Percentage Sept. Net Op. Income to that of Earlier Months
Jan.	− 5	+ 37
Feb.	+ 3	+ 113
Mar.	− 6	− 3
Apr.	− 7	− 2
May	− 7	+ 10
June	− 6	+ 3
July	− 1	+ 26
Aug.	− 7	− 3

September's operating ratio of 77.8 per cent was lower than that for any previous month in 1949 (compared with an average ratio of 81.1 per cent in the first eight months of the year and a range of from 84.3 per cent in January to 79.0 in August). Since this ratio is influenced as much by traffic levels and gross revenues as by operating expenses, the fact that a relatively low level of traffic (due in part to the start of the coal strike on September 19) brought gross revenues down to a point below that of all but one month in the year makes the showing of September's net operating income even more favorable than would appear at first glance.

Given an increase in traffic by settlement of work stoppages, the railroads' net in the immediate future should be substantially healthier than it was in September. A great deal of the traffic which did not move during the steel strike of October and during the coal strike from September 19 to November 10 and from December 1 to 3 (all inclusive), must move later. Even the current three-day work-week which John L. Lewis has imposed on coal mining cannot wholly neutralize the effect on traffic of the tremendous pent-up demand for fuel. Most economists seem to think that the "recession" of the first half of 1949 has been arrested and reversed for the short term at least. All of this should raise the level of the railroads' revenues—the "in-put" part of the ratio from which net operating income is derived.

Doubtless the impact of the 40-hr. week will be lessened even more as time goes on and managements succeed in completing the revolutionary changes in operation and administration now in process. Though inspired by the shorter work-week, these projects will have an influence far beyond the mere avoidance of hiring additional employees or accruing overtime. The railroads have found already that the new hourly pay scales brought by the shorter work-week and the retroactive seven-cents-an-hour increase, effective October 1, 1948, now make practicable and imperative a degree of mechanization which was heretofore "beyond the pale."

WHO SAYS "THERE AIN'T NO FEATHERBEDDING?"

"Payments collected in this docket totalled $35,000, and it is estimated that further benefits which will stream from work train and air hose agreements will feather members' nests with $250,000 more."

Trainman News, August 1. (*Brotherhood of Railroad Trainmen weekly newspaper.*)

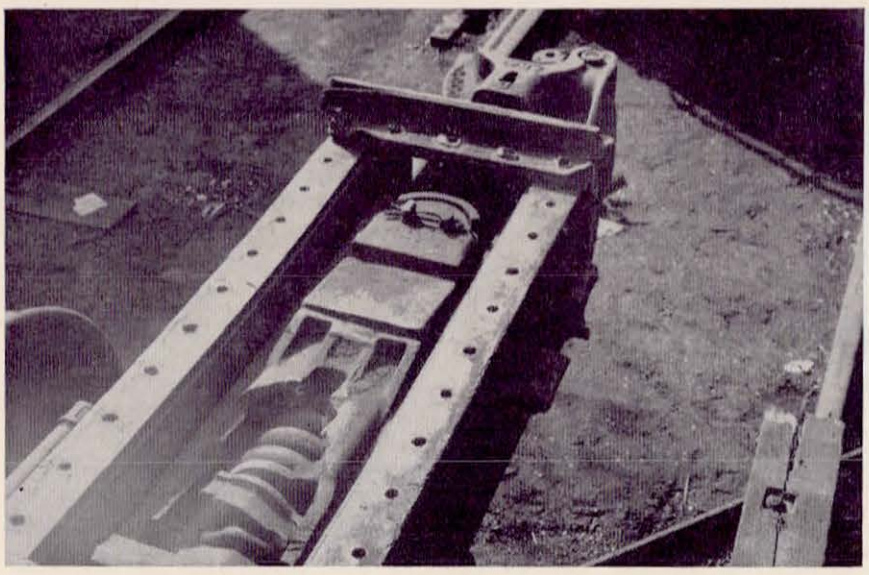
SELECTING THE PROPER

[This article is written from the viewpoint of the loss and damage prevention forces of a major railroad, as stated to *Railway Age*. Prevention men from several other lines have expressed themselves in agreement with its conclusions.—Editor]

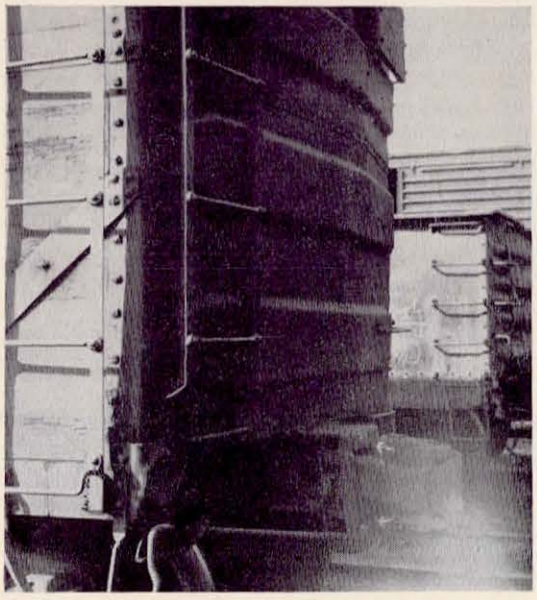
The role of the freight car in causing loss and damage to lading is not always appreciated, not easily evaluated in dollars and cents, and, therefore, to some extent may be underrated. There is reason to believe, however, that equipment failures and defects added to the railroads' freight claim bill at least $10-12 million in 1948, since almost $7 million can be attributed directly to the equipment (see *Railway Age* of June 11, page 39).

As is the case with all freight claims, it is impossible to estimate how much this meant in loss of good will to the railroad industry. Unfortunately, it is also impossible to say just how much proper maintenance of rolling stock saves the railroads in avoidance of loss and damage. Most mechanical department men agree that improved mechanical devices and upgrading of cars do contribute to reduction of maintenance and to safety, but there is less evidence of general appreciation of what these devices can do toward cutting the bill for loss and damage.

The railroad damage-prevention man, in the course of his daily work, has many chances to see what the various defects in freight cars can do to the lading. He realizes that, of all the causes of loss and damage to freight, defective equipment is one that is directly in the power of the carriers to correct. While he recog-

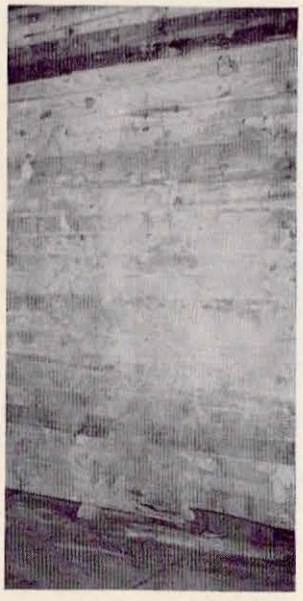


Left—There's not much protection for the lading from draft gear which has been in service too long



Left—Weak draft gear has allowed the coupler horn to beat against the striker casting and is in part responsible for the terrifically bowed end of this car, as well as for damage to packaged commodities loaded in it

Right—The bowed end lining makes this car unsafe for any load which must be kept tight



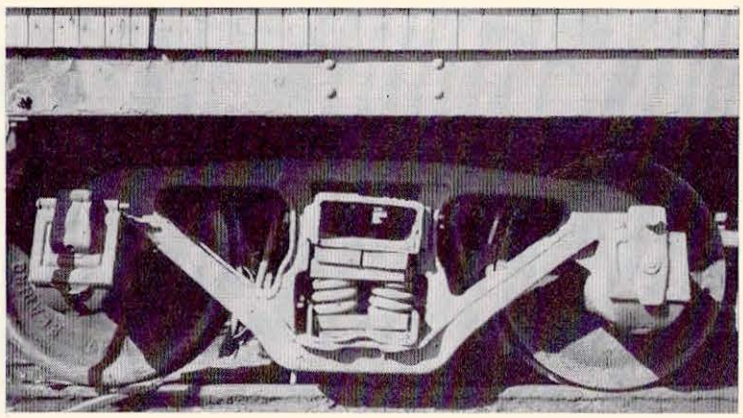
CAR PREVENTS LADING DAMAGE

The railroads' claim bill will be cut if the load is kept in mind when cars are placed for loading, say loss and damage prevention men

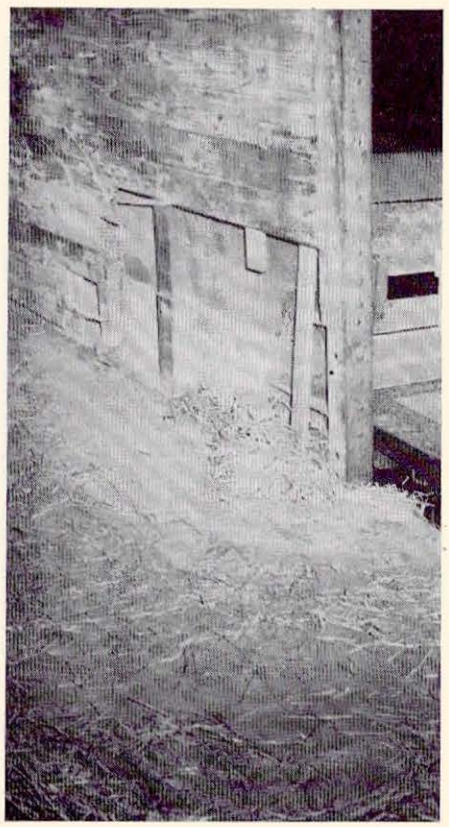
nizes that it is neither practicable nor economical to to have all cars graded as Class A, he feels, nevertheless, that more attention paid to what the freight car can do—and frequently does—to damage its lading can pay off in many ways.

As the prevention man sees it, there are five practices which must be prosecuted more thoroughly if the maximum possible prevention of loss and damage due to defective equipment is to be achieved. These are:

1. Better maintenance of cars and closer inspection by the mechanical department. The prevention man strenuously urges extension of programs of education for mechanical-department personnel in what to look for when inspecting and approving cars to be placed

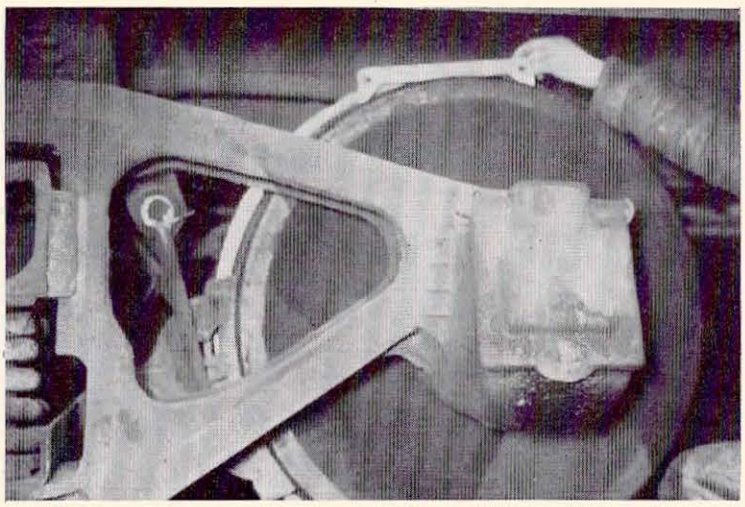


Right—The truck springs are out of place and the tipped bolster eliminates side bearing clearance which in turn causes binding and excessive vertical shocks to lading



Left—Defective lining damages packaged and sacked goods and contributes to breakage from movement of loads

Below—The shine of the brake hanger suggests that though wheels are not yet excessively worn this truck is pounding enough to damage lading susceptible to vertical oscillation



for loading a particular commodity, taking into account that frequently the damage results from a combination of defects any one of which is below the recognized condemning limit.

2. Strict adherence to condemning limits as established in Association of American Railroads interchange rules.

3. Continued research to improve devices on cars, in order to better the riding quality by minimizing horizontal and vertical shocks.

4. Augmenting the program for educating operating personnel, especially agency forces, conductors and yardmasters, as to the effect that the freight car has on freight, and what to look for when selecting cars for shippers.

5. Strict application of the freight claim rule (No. 64) which penalizes the carrier furnishing unfit equipment. This necessarily involves educational programs for claim investigators and prevention men so they can readily identify damage resulting from unfit equipment.

Draft Gear and Trucks

The prevention man is convinced that one of the trouble causers is the low efficiency draft gear, which may have too much slack action due to wear, or be broken. Both defects produce roughly the same effect. The slack action of the draft gear, of course, contributes to increased vertical thrusts which in turn cause waste grabs, broken journal bearings and displaced wedges, all resulting in hot boxes, making road set-outs necessary, with the result that freight is delayed even if it is not actually damaged. (In 1948, claims paid out for delay totaled nearly $8 million, part of which was due to hot boxes.)

Also important is the damage to the car itself that may be caused by defective draft gears. Their most serious consequence, however, is the damaging impacts to freight that may occur when the draft gear is in such condition that it can give little cushioning against such shocks. Commodities such as canned goods, porcelain enamel products—stoves and refrigerators—paper, steel on skids, etc. (1948 claim bill more than $31 million), all are subject to shock damage, and the prevention men urge that cars placed for loading these articles have efficient draft gears. Without them a first step has been taken toward producing a claim before the car is loaded. Thus a competent car inspector pays close attention to the condition of the draft gears and endeavors to keep cars with worn or low-efficiency draft gears in services where full cushioning ability is not essential to protect the lading. By the same token, if the lading does require draft gears of peak efficiency, he limits his selection of the car to those meeting the highest standards.

Combinations of Defects

Fragile freight subject to vibration damage, such as meat on hooks, cheese, eggs, bulk flower pots, newsprint and crockery, demands a car with smooth-riding trucks. This means simply that cars into which this type of freight is loaded must be inspected to see that the wheels, axles, springs, bolsters, center plates, side bearings and snubbers are well above A.A.R. condemning limits. For example, cars with wheels having tread defects slightly short of condemning limits should not be used in such service.

Even cars with no single part worn to or defective by A.A.R. condemning limits frequently cause damage to commodities which are particularly susceptible to injury from vibration or oscillation. This is brought about by the combined effect of minor defects working in concert to create an unsatisfactory ride. Such a condition may be illustrated by assuming a car to have a pair of wheels with 2¼-in. flat spots, plus truck springs with a permanent set and reduced coil height. None of the defects is sufficient to require renewal of parts, but a car in such a condition should not be selected for lading subject to damage by excessive vertical oscillation.

Progressing upward from the sills and trucks, the house-car superstructure may contribute to lading damage.

If the frame is not absolutely rigid the top portion of the box car generally moves under impact. The end walls then are not truly perpendicular at the time of heavy impact, and movement of the load is possible, with another chance for damage. Carriers, of course, try to avoid spotting a car with loose or working superstructure for loading any commodity that must be stacked high or one which will require above-centerline bracing, even though it is possible for shippers to compensate for this defect by specially bracing the upper half of the load with extra-heavy cross- and K-braces, or additional steel straps.

Leaking roofs, walls and doors cause wet damage and, frequently, cinder damage. Recently a car loaded with finished doors and window sash arrived at its destination with its lading in such shape that 81 per cent was marred by cinder scratches so deep that they could not be sanded out. The main cause of this damage was an opening all the way across the door at the top as well as a partial opening at the sides.

The Car Wall

The car wall plays a surprisingly large part in causing damage to freight. Prevention-conscious car inspectors do not select, or card, cars with broken or bowed end lining for commodities which must be tightly stowed. Unless the end wall is a true and flat surface, no one can keep a load tight and have the center gate hold it uniformly. Articles in cartons or crates, or loose articles requiring even stacks have "two strikes on them" when they are loaded against broken or bowed end lining. While the side lining may not be quite as important in the production of damage, it too can chafe and tear cartons or bags, and it may allow lateral movement.

It should be evident that the prevention man's plea for the thorough application of the five practices mentioned above will help cut the claim bill and at the same time hold business on the railroads. The full necessity for this, and the eventual savings, will only begin to be evident, however, when claim investigators rigorously charge to the proper category claim payments made as a result of car defects, and when the freight-claim fraternity universally adopts the practice of placing greater responsibility for loss on the originating carrier supplying the defective equipment.

Sawyer Report Suggests "New Concepts" in Federal Transport Policy

Numerous recommendations and suggestions call for immediate consideration of user charges for facilities provided by the government, an end to "cost-plus" subsidies for air lines, compulsory consolidation of railroads, and fixing rates on the basis of fully-distributed costs

Immediate consideration of a "general system of user charges" for transport facilities provided by the federal government, and replacement of the present "cost-plus" plan of air line subsidies with arrangements whereby such aids would be on a "fixed or gradually diminishing" basis are called for in recommendations of a transportation report which Secretary of Commerce Sawyer has submitted to President Truman. The report's numerous other recommendations and suggestions include those calling for compulsory consolidation and coordination of railroad facilities; and the making of transportation rates on a fully-distributed-cost basis, with an end to out-of-pocket rate-making except in special situations.

Like the (Hoover) Commission on Organization of the Executive Branch of the Government, Secretary Sawyer favors centralization in one agency of all federal-government "research and promotional" work and other activities in the transport field, except the regulatory functions of the independent agencies. The Hoover Commission suggested that this agency be the Department of Commerce which would thus get such I.C.C. functions as those relating to the formulation of railroad consolidation plans, car service, and safety.

Sawyer Is Willin'

While his report does not actually nominate his department for the job, Secretary Sawyer's letter of transmittal to the President says that the department has been making transport studies "on a very modest scale" for some time. The report, he adds, "clearly indicates the need for extension of this activity which, in my judgment, the department should undertake promptly." Moreover, the report suggests that the agency which had the "general responsibility for evolving the nation's basic transportation programs" in times of peace could be converted readily into a war agency with functions like those exercised during World War II by the former Office of Defense Transportation. Such a permanent agency, as the report puts it, "would appear to furnish a good nucleus for any necessary wartime-control agency or agencies."

Meanwhile, the secretary is more cautious about unification of regulation. He thinks it "probable," he says in the report, that "a consolidation of regulatory controls will eventually be necessary"; but he makes no attempt to answer the question of whether the time for such consolidation has yet arrived. The Hoover Commission failed to recommend unified regulation, thus rejecting a recommendation of the "task force" which made its transport studies.

Secretary Sawyer's report was made in response to a request from President Truman, who on August 30 asked the secretary to submit by December 1 a report "outlining the major policy issues which need to be resolved at this time in order to achieve maximum effectiveness and consistency of federal programs in the transportation field." (See *Railway Age* of September 17, page 92.) The President also asked for the secretary's views on the "possible desirability of having the Department of Commerce conduct, on a continuing basis, broad studies relating to federal transportation policies and programs." It was in response to the latter that the secretary expressed his view, noted above, that the department should "undertake promptly" to expand work it has been doing along that line.

President's Statement

The report was made public at the White House on December 13 with a statement from the President who said that "the issues raised . . . deserve careful consideration within the government and by the general public." "The adequacy and efficiency of our transportation services," the President continued, "have a direct impact upon the well-being of our peacetime economy, and upon our defense preparedness. It is essential that federal programs, covering a wide range of regulatory and promotional activities, make the maximum possible contribution to a healthy and balanced transportation system. I am requesting all federal agencies which have responsibility for transportation matters to give me their views on the policy questions raised in this report. With the cooperation of such agencies, immediate and continuing attention will be given to the exploration of these important problems."

The report occupies 116 double-spaced, typewritten pages. Secretary Sawyer's letter of transmittal says that the "basic materials" for the report were prepared by Dr. Paul M. Zeis and his staff, and Frank L. Barton, both of the department. The letter also reveals that the report was reviewed with three consultants: C. E. Childe, who was a member of the former Board of Investigation and Research; Dr. James E. Nelson of Washington State College, who was a member of the B.I.R. staff; and Ernest W. Williams of Columbia University. Much of the report is reminiscent of B.I.R. reports. It has, for example, discussions complaining about lack of uniformity in railroad rates and of alleged "discriminatory" rates; and predictions of prospective savings from railroad consolidations and coordinations. Also, there are arguments in favor of holding the line

on railroad regulation, or even increasing it, while discussions of regulation of highway, water and air carriers include suggestions to the effect that the present set-up may be unduly restrictive.

Scope of Report

This plan of presenting arguments for or against various policies or lines of action is the general pattern of the report. The secretary's recommendations are often embodied in such arguments rather than being flatly stated. The report is divided into five parts which consider, in turn: The Nature of the Federal Transportation Program; Federal Promotional Activities; Federal Regulatory Activities; Conflicts Between Federal Regulation and Promotion; and Federal Transportation Policy and National Defense.

"The basic objective of federal transportation policy," the report says at its outset, "must be the establishment and maintenance of a transportation system which is adequate to meet the growing needs of commerce, industry, and agriculture as well as those of the general public for economical and efficient transportation service. The needs of national defense are, of course, of major importance."

Brief attention is given to the development of regulation as the report finds in vogue today "new concepts" which have resulted in a "transfer of attention from the needs of the user of transportation service to the needs of the transportation industry itself." With this "new approach" placing "restrictions upon competition through control over entry into business and the exercise of minimum rate authority," the federal government "found itself fostering and promoting competition on the one hand and restricting it on the other." Added to these activities, the report continues, are subsidies to air transport and ocean shipping, which have been justified on the theory that they meet "national needs."

The discussion of this set-up includes a warning that "aid to shipping and air transportation could be carried to the point where it would weaken rail transportation services essential to national defense." A little further on, the report explains that it has not discussed federal promotional activities for railroad transportation, because the government's "principal activity" in that field is regulation. "It should be made clear, however," the report adds, "that federal transportation policy must give major attention to sound and healthy railroads as part of the transportation system."

Labor Situation Not Considered

Then come brief references to safety and labor relations in the transportation industry—subjects which are otherwise excluded from the report, because "adequate discussion" of them "would result in too long a report." So the secretary turns to his consideration of the "problem of achieving a coordinated federal transportation program." And before proceeding to suggest specific actions, he sets out these general conclusions:

"In the case of promotional activities, except in special cases where national defense considerations are urgent, the proper test of any activity is whether it results in a new or improved or more economical transportation service which is really needed. In the case of regulatory activities, the proper test of any particular regulatory program is whether it will produce for the general public improved and low-cost services which are available to everyone on a non-discriminatory basis."

Present federal promotional activities, it is noted, involve "large and rapidly increasing expenditures," amounting now to "nearly $1 billion a year" for the provision of "basic facilities" for water, highway and air transport. Dealing first with expenditures on waterways, the report explains briefly how the Army's Corps of Engineers justifies proposed projects on the basis of prospective "savings" to shippers. The secretary expresses his belief that the potential effect on other forms of transportation is not weighed by the engineers in reaching a decision to recommend a particular waterway project. He also has the "general impression" that "in many cases the traffic which subsequently developed on the waterway was far less than that assumed when the project was recommended."

As to highways, the report reviews present federal-aid policies, and refers to the recent report wherein the Bureau of Public Roads recommended that 11¼ billion dollars, in addition to the present program, be spent over a period of not more than 20 years to correct "deficiencies" on roads of the so-called Interstate Highway System, which the bureau would expand from 38,000 to 40,000 mi. (See *Railway Age* of July 9, page 164.) This, and proposals "to enlarge the federal share of highway improvement costs," prompted the secretary to suggest that more attention be given to "striking an appropriate balance between federal, state, and local activities in the highway field." Many highways now eligible for federal aid "might be considered of secondary importance from a national standpoint," Mr. Sawyer adds.

"Free Hands" on Promotion

The principal emphasis of his discussion of expenditures on airways and airports is on the fact that the Civil Aeronautics Administration is there functioning under statutes which fail to provide "clear guideposts." The federal-aid airport program, for example, leaves the administrator of C.A.A. "with a virtually free hand to determine what airports should be built and where they should be built."

This "free hand" attribute, however, is not peculiar to C.A.A. The report's summary of its discussion of the facilities programs notes that "the promoting agencies have for the most part only very broad and general standards established for them by statute." With each agency thus made "judge of the merits of its own promotional activities," it has "naturally become convinced of their great importance," the summary adds. It goes on to say that there has been "little coordination" of the facilities programs; and that, where the facilities are provided without charge, it is "difficult to measure the utility of the separate programs in terms of the willingness of users to pay for the use of the facility." This brings the secretary to his call for immediate consideration of a "general system of user charges."

"Careful study," the report says, "should be made of the areas in which user charges are not now in effect. In those areas such as roads in which user charges already apply, it is desirable to determine whether each type of user is paying his fair share. Since the facilities are provided for the benefit of transportation users directly or for the benefit of transportation companies who in turn supply services for the using public, it

might be desirable for the government to recapture an important part, and in some cases, all of its expenditures. In some cases, of course, defense considerations or the need to accelerate development of particular services or areas may temporarily justify furnishing facilities at government expense.

"The imposition of charges, moreover, could provide concrete evidence of the actual value of the various aids which are being supplied. Failure of the users to utilize facilities for which some charge was made would suggest that such facilities are not economically justified. On the other hand, the prompt and adequate payment for other facilities might suggest that additional emphasis be placed on those parts of the program which the public was willing to support. It is recognized that wider imposition of user charges raises complicated problems which need to be explored. Nonetheless, the federal government should undertake to study and resolve the issue of assessing user charges."

Subsidies to Air Lines

Leading into its recommendation that the "cost-plus" system of subsidies to air lines be abandoned, the report says that routes now served by the subsidized carriers indicate "optimistic assumptions" on the part of the Civil Aeronautics Board as to "the speed with which air transportation would develop new markets or penetrate old ones." Also, it is stated that the board's promotion of competition has been a promotion of competition between air lines already in existence when the Civil Aeronautics Act was passed. "Relatively few newcomers," the report adds, "have been certificated for any routes other than feeder lines of low traffic density. Moreover, companies affiliated with other forms of transportation, such as railroads and steamship lines, have experienced little success in obtaining certificates for air transport services."

The "cost-plus" system of air line subsidies is described as a plan under which individual lines are "virtually guaranteed against bankruptcy." This has resulted in air mail payments for trunk-line carriers ranging in 1948 from 60 cents to $22 per mail ton-mile. In the case of some feeder lines, the payments reached "more than $70" per ton-mile. These variations indicate to Secretary Sawyer that some of the air lines "are operating routes which have little immediate prospect of being placed on a self-sustaining basis." This situation, he adds, "has a definite bearing upon the financial revenues of the railroads and other common carriers and intensifies the problems of the regulatory authorities who are concerned with the maintenance of a sound surface transport system."

All of which, as the secretary puts it, "raises the question which must ultimately be faced as to when subsidies to air transportation companies should be terminated." As a first step, he suggests that "subsidy payments should be determined and paid separately and not concealed in payments for air-mail service." One means of dealing further with the problem, he continues, is to replace the "need clause" of the Civil Aeronautics Act with new provisions "empowering the regulatory agency to establish in advance subsidies at fixed rates for a given time for groups or classes of carriers. An additional consideration is whether the regulatory authorities should have more definite powers than now exist to terminate subsidy payments in cases where it becomes clear that the particular service is not rendering a significant contribution to either the needs of commerce or those of national defense."

Later on, the report suggests that transport subsidies based on national defense should "wherever practicable" be charged to the budget of the National Military Establishment. There is also a brief reference to the government-owned Inland Waterways Corporation, operator of the Federal Barge Lines. Since this service has been operated at a loss, the operation "must be regarded as an indirect subsidy to the users of the service."

The recommendation that all major promotional activities be grouped in one agency for "unified direction and control" is based generally on the report's finding of a "need for re-examination" of such activities. Secretary Sawyer then proceeds to his consideration of federal regulatory activities. First, he looks over the effect of regulation on service, and finds it generally good.

"In the area of regulation of service," he says, "it appears clear that the regulatory process has met with considerable success. Most of the discriminatory practices formerly complained of have disappeared and transport users are normally supplied with the equipment they need on an equitable basis."

There is no such good word for the rate structure which is called a "mass of inconsistencies and inequalities." As "one step to improve the situation" it is suggested that consideration be given to the "restoration of penalties in the law for failure on the part of a common carrier to quote the proper rate." Such provisions, formerly in section 6 of the Interstate Commerce Act, were repealed by the Transportation Act of 1940.

"Rate discrimination" is next discussed; and there it is found that the present structure "compels some users to pay substantially higher rates than would otherwise be required in order to compensate for underpayment by others for transportation services which are rendered." Payment by carload shippers for the "substantial deficits" incurred in railroad passenger and l.c.l. operations is cited as an example. As part of a "careful re-examination of the small shipment and l.c.l. situation," the report suggests that consideration be given to I.C.C. Commissioner Alldredge's proposal to eliminate express operations and divert the present express traffic to parcel post and expedited l.c.l. freight services.

The B.I.R. Influence

Other rate "discriminations" listed include those allegedly resulting from different bases of rates on different commodities and from the different rate scales in the various territories. B. I. R. studies are cited in support of these allegations, and there is also a suggestion that "studies on a continuing basis showing the rates actually paid by shippers should be made." The general rate increases of recent years are found to have multiplied the "discriminations and inequities which already existed." Next there is complaint about "delays in correcting discriminations," it being pointed out that uniform classification and uniform class-rate scale prescribed by the I.C.C. in the Nos. 28310 and 28300 proceedings have not yet become effective.

Then comes the argument in favor of rates based on fully-distributed costs. "While the out-of-pocket theory is attractive to the individual carriers confronted with an immediate situation," the argument says, "it should not have a similar attractiveness for a regulatory agency

(*Continued on page* 66)

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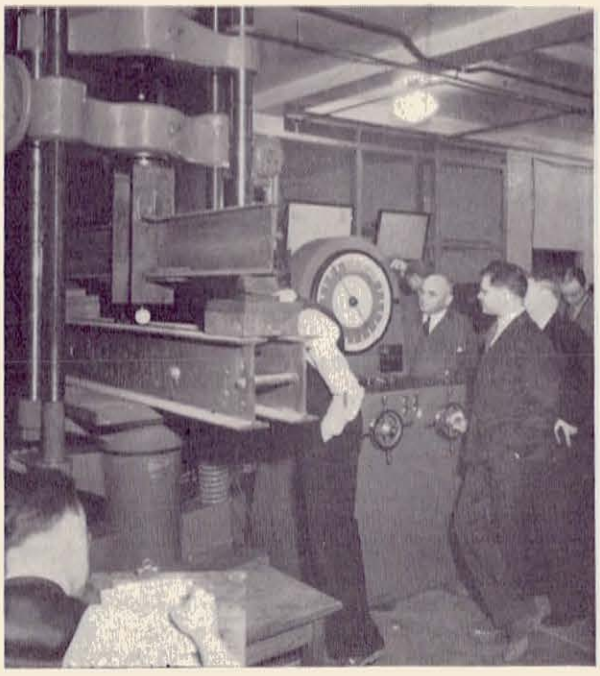

Author suggests remedy as survey shows that only 5 schools, of a total of 122 that afford civil engineering curricula, place emphasis on railroads

Most U. S. Colleges Shun Railroad Engineering

Railway engineering education it at a low level in the United States. Few of the nation's colleges offer engineering students more in the field of railway engineering than route surveying.

There are 122 schools in the country that provide civil engineering curricula. Of these only 5 place emphasis on railroads and only 10 others provide as many as one or two courses in railway engineering. This leaves 107 technical schools that offer no courses, either undergraduate or graduate, dealing with the problems of railway construction, maintenance or operation. On the other hand, 39 of these schools place emphasis on highway engineering and 73 give one or two courses devoted specifically to highway construction and maintenance, traffic, and administration. Nineteen colleges offer one or two courses in airport construction and design. None of the schools offers courses on waterway transportation, as such, but all offer work on heavy construction, such as docks, wharves, canal locks and breakwaters that are included in the facilities of waterway transport. Railway engineering, which requires the highest type engineer, is ignored by 87 per cent of the schools, while engineering courses in the other types of transport are provided by the majority of engineering colleges.

What are the railway engineering courses that are taught? Route engineering as taught in 93 schools is an advanced surveying course devoted to locating routes for railways, highways, canals, pipe lines, etc. Route surveying covers preliminary location, the laying out of simple, compound and spiral curves, and earthwork calculations. It is not a railway course, but the railroads use the same methods for laying out curves and for grading as other route lines.

The five schools which emphasize railroads are Cornell University, University of Illinois, University of Michigan, Michigan State College, and University of Minnesota. These schools offer courses in four or more of the following subjects: (1) Railway maintenance of way; (2) railway location and design; (3) railway operation and management; (4) railway research; (5) railway signaling; (6) railway terminals; and (7) railway economics and administration. These schools may graduate students with a Bachelor of Science Degree either in railway engineering or in civil engineering with railway option. It is in these five places only that railroad engineering is taught in any adequate manner.

The course provided by schools that give only one or two railroad courses is of a general nature. All the varied facets of railroad engineering are covered

might be desirable for the government to recapture an important part, and in some cases, all of its expenditures. In some cases, of course, defense considerations or the need to accelerate development of particular services or areas may temporarily justify furnishing facilities at government expense.

"The imposition of charges, moreover, could provide concrete evidence of the actual value of the various aids which are being supplied. Failure of the users to utilize facilities for which some charge was made would suggest that such facilities are not economically justified. On the other hand, the prompt and adequate payment for other facilities might suggest that additional emphasis be placed on those parts of the program which the public was willing to support. It is recognized that wider imposition of user charges raises complicated problems which need to be explored. Nonetheless, the federal government should undertake to study and resolve the issue of assessing user charges."

Subsidies to Air Lines

Leading into its recommendation that the "cost-plus" system of subsidies to air lines be abandoned, the report says that routes now served by the subsidized carriers indicate "optimistic assumptions" on the part of the Civil Aeronautics Board as to "the speed with which air transportation would develop new markets or penetrate old ones." Also, it is stated that the board's promotion of competition has been a promotion of competition between air lines already in existence when the Civil Aeronautics Act was passed. "Relatively few newcomers," the report adds, "have been certificated for any routes other than feeder lines of low traffic density. Moreover, companies affiiliated with other forms of transportation, such as railroads and steamship lines, have experienced little success in obtaining certificates for air transport services."

The "cost-plus" system of air line subsidies is described as a plan under which individual lines are "virtually guaranteed against bankruptcy." This has resulted in air mail payments for trunk-line carriers ranging in 1948 from 60 cents to $22 per mail ton-mile. In the case of some feeder lines, the payments reached "more than $70" per ton-mile. These variations indicate to Secretary Sawyer that some of the air lines "are operating routes which have little immediate prospect of being placed on a self-sustaining basis." This situation, he adds, "has a definite bearing upon the financial revenues of the railroads and other common carriers and intensifies the problems of the regulatory authorities who are concerned with the maintenance of a sound surface transport system."

All of which, as the secretary puts it, "raises the question which must ultimately be faced as to when subsidies to air transportation companies should be terminated." As a first step, he suggests that "subsidy payments should be determined and paid separately and not concealed in payments for air-mail service." One means of dealing further with the problem, he continues, is to replace the "need clause" of the Civil Aeronautics Act with new provisions "empowering the regulatory agency to establish in advance subsidies at fixed rates for a given time for groups or classes of carriers. An additional consideration is whether the regulatory authorities should have more definite powers than now exist to terminate subsidy payments in cases where it becomes clear that the particular service is not rendering a significant contribution to either the needs of commerce or those of national defense."

Later on, the report suggests that transport subsidies based on national defense should "wherever practicable" be charged to the budget of the National Military Establishment. There is also a brief reference to the government-owned Inland Waterways Corporation, operator of the Federal Barge Lines. Since this service has been operated at a loss, the operation "must be regarded as an indirect subsidy to the users of the service."

The recommendation that all major promotional activities be grouped in one agency for "unified direction and control" is based generally on the report's finding of a "need for re-examination" of such activities. Secretary Sawyer then proceeds to his consideration of federal regulatory activities. First, he looks over the effect of regulation on service, and finds it generally good.

"In the area of regulation of service," he says, "it appears clear that the regulatory process has met with considerable success. Most of the discriminatory practices formerly complained of have disappeared and transport users are normally supplied with the equipment they need on an equitable basis."

There is no such good word for the rate structure which is called a "mass of inconsistencies and inequalities." As "one step to improve the situation" it is suggested that consideration be given to the "restoration of penalties in the law for failure on the part of a common carrier to quote the proper rate." Such provisions, formerly in section 6 of the Interstate Commerce Act, were repealed by the Transportation Act of 1940.

"Rate discrimination" is next discussed; and there it is found that the present structure "compels some users to pay substantially higher rates than would otherwise be required in order to compensate for underpayment by others for transportation services which are rendered." Payment by carload shippers for the "substantial deficits" incurred in railroad passenger and l.c.l. operations is cited as an example. As part of a "careful re-examination of the small shipment and l.c.l. situation," the report suggests that consideration be given to I.C.C. Commissioner Alldredge's proposal to eliminate express operations and divert the present express traffic to parcel post and expedited l.c.l. freight services.

The B.I.R. Influence

Other rate "discriminations" listed include those allegedly resulting from different bases of rates on different commodities and from the different rate scales in the various territories. B. I. R. studies are cited in support of these allegations, and there is also a suggestion that "studies on a continuing basis showing the rates actually paid by shippers should be made." The general rate increases of recent years are found to have multiplied the "discriminations and inequities which already existed." Next there is complaint about "delays in correcting discriminations," it being pointed out that uniform classification and uniform class-rate scale prescribed by the I.C.C. in the Nos. 28310 and 28300 proceedings have not yet become effective.

Then comes the argument in favor of rates based on fully-distributed costs. "While the out-of-pocket theory is attractive to the individual carriers confronted with an immediate situation," the argument says, "it should not have a similar attractiveness for a regulatory agency

(*Continued on page* 66)

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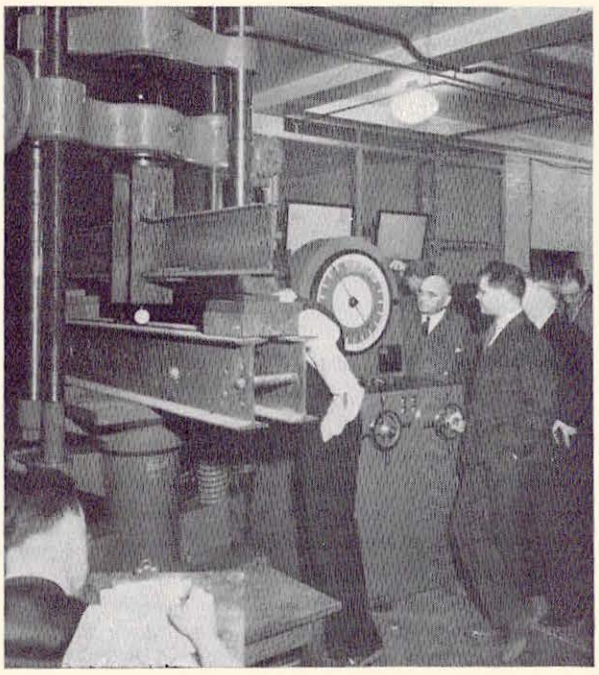

Author suggests remedy as survey shows that only 5 schools, of a total of 122 that afford civil engineering curricula, place emphasis on railroads

Most U. S. Colleges Shun Railroad Engineering

Railway engineering education it at a low level in the United States. Few of the nation's colleges offer engineering students more in the field of railway engineering than route surveying.

There are 122 schools in the country that provide civil engineering curricula. Of these only 5 place emphasis on railroads and only 10 others provide as many as one or two courses in railway engineering. This leaves 107 technical schools that offer no courses, either undergraduate or graduate, dealing with the problems of railway construction, maintenance or operation. On the other hand, 39 of these schools place emphasis on highway engineering and 73 give one or two courses devoted specifically to highway construction and maintenance, traffic, and administration. Nineteen colleges offer one or two courses in airport construction and design. None of the schools offers courses on waterway transportation, as such, but all offer work on heavy construction, such as docks, wharves, canal locks and breakwaters that are included in the facilities of waterway transport. Railway engineering, which requires the highest type engineer, is ignored by 87 per cent of the schools, while engineering courses in the other types of transport are provided by the majority of engineering colleges.

What are the railway engineering courses that are taught? Route engineering as taught in 93 schools is an advanced surveying course devoted to locating routes for railways, highways, canals, pipe lines, etc. Route surveying covers preliminary location, the laying out of simple, compound and spiral curves, and earthwork calculations. It is not a railway course, but the railroads use the same methods for laying out curves and for grading as other route lines.

The five schools which emphasize railroads are Cornell University, University of Illinois, University of Michigan, Michigan State College, and University of Minnesota. These schools offer courses in four or more of the following subjects: (1) Railway maintenance of way; (2) railway location and design; (3) railway operation and management; (4) railway research; (5) railway signaling; (6) railway terminals; and (7) railway economics and administration. These schools may graduate students with a Bachelor of Science Degree either in railway engineering or in civil engineering with railway option. It is in these five places only that railroad engineering is taught in any adequate manner.

The course provided by schools that give only one or two railroad courses is of a general nature. All the varied facets of railroad engineering are covered

ENGINEERING COURSES IN TRANSPORTATION OFFERED IN SCHOOLS AND UNIVERSITIES OF UNITED STATES WHICH HAVE CURRICULA LEADING TO A DEGREE IN CIVIL ENGINEERING

	General Transportation Eng.	Route Engineering and Surveying	General Railway Engineering	Railway Maintenance of Way	Railway Operation and Management	Railway Location and Design	Railway Research	Railway Signaling	Railway Terminals	Railway Economics and Administration	General Highway Engineering	Pavements and Materials	Highway Traffic Engineering	Highway Finance and Administration	Highway Soil Engineering	Airport Planning and Design
U. of Akron		1									1					
U. of Alabama		1									1					
Alabama Poly. Inst.*																
U. of Arizona		1									1					
U. of Arkansas		1									1					
Poly. Inst. of Brooklyn		1									2g					
Bucknell U.		1									1					
U. of California (Berkeley)		1				1				1	1					1g
California Inst. of Tech.	1	1														
Carnegie Inst. of Tech.	1															
Case School of Applied Science																
Catholic U. (School of Eng. & Arch.)		2	1								1					
U. of Cincinnati		1									1					
The Citadel											1					
City College of New York		1									1					
Clarkson College of Tech.		1									1					
Clemson Agri. Inst.		1										1				
Colorado State School of Agri. & Mech.		1									1					
U. of Colorado		1									1					
Columbia U.																1g
U. of Conn.	1															
Cooper Union	1	1														
Cornell U.	1g	1		1g	1g	1g	1g									
Dartmouth U.	1										1					
U. of Dayton		1									1					
U. of Delaware		1									1	1				
U. of Detroit		1									1					
Detroit Inst. of Tech.*																
Drexel Inst. of Tech.		1									1					
Duke U.		1	1													
U. of Florida											1					
George Washington U.		1														
Georgia School of Tech.											1			1		
Howard U.		1														
Illinois Inst. of Tech.		1									1g		1g	1g		
U. of Illinois		1		1	1	1g		1	1		1		1			1 &1g
U. of Idaho		1									1 &1g					
Indiana Technical College		1														
State U. of Iowa*																
Iowa State College of Agri. & Mech.	1g	1	1			1g					1 &1g	1	2g	1 &1g	1g	1
Johns Hopkins U.	1										1 &1g		1g	3g		
U. of Kansas		1									1					
Kansas State College of Eng. & Agric.	1	1									2					1
U. of Kentucky		1	1								1	1				
Lafayette College		1														
Lehigh U.		1									1					
U. of Louisville		1									1					1g
Univ. of Maine		1									3			1		
Manhattan College	1	1														
Marquette U.		1	1								1 &1g					
U. of Maryland		1									1g					
Mass. Inst. of Tech.	1	1												1		
U. of Michigan	2g	1 &1g	1	1g	2g	2g	1g		2g	2g	1 &2g		1g	1		
Mich. State College	1g	1 &1g	1		1g			1g	1g		3g		1g	1		1
Mich. State College of Min. & Tech.		1									1					1
U. of Minnesota	1g	1	1			1g			2g	1g	1					
U. of Mississippi		1														
Louisiana Poly. Inst.		1														
Louisiana State U. of Mech. & Agri.		1									1					
Mississippi State College*																
Montana State College	1										1					
U. of Missouri (School of Mines & Met.)		1	1								1					
U. of Missouri										1	1					
U. of Nebraska			2g								2 &1g	1 &1g		1g		
U. of Nevada		1														
U. of New Hampshire		1									1					
U. of New Mexico		1									1			1		
New Mexico School of Mines		1									1			1g		
New Mexico College of Agri. & Arts*																
New York U.	1															
Newark College of Eng.	1	1														
State College of North Carolina	2															
U. of North Dakota		1									1					
U. of Notre Dame		1									1					1
Ohio State U.	2	1														
Ohio U.	1										1					
U. of Oklahoma											2	1	1	1		
Oklahoma Agri. & Mech. College		1									1			1		
Oregon State College (School of Eng.)	1g	1									1	1		1g		
U. of Pennsylvania		1									1					
Pennsylvania State College*																
Princeton U.		1									1					
Purdue U.	2g	1	1								1	1		1		1g
U. of Pittsburgh		1									1					
Rensselaer Poly. Inst.	1	1	1 &1g								1					2
Rhode Island State College											1					
Rice Inst.		1									1					
Rose Poly. Inst.											1					1
Rutgers U.	1	1									1 &2g		1 &1g			
U. of Santa Clara	2	1											1			
U. of South Carolina											1					1
South Dakota School of Mines & Tech.*																

ENGINEERING COURSES IN TRANSPORTATION OFFERED IN SCHOOLS AND UNIVERSITIES OF UNITED STATES WHICH HAVE CURRICULA LEADING TO A DEGREE IN CIVIL ENGINEERING

	General Transportation Eng.	Route Engineering and Surveying	General Railway Engineering	Railway Maintenance of Way	Railway Operation and Management	Railway Location and Design	Railway Research	Railway Signaling	Railway Terminals	Railway Economics and Administration	General Highway Engineering	Pavements and Materials	Highway Traffic Engineering	Highway Finance and Administration	Highway Soil Engineering	Airport Planning and Design
South Dakota School of Mech. Arts & Agri.		1									1					
U. of Southern California		1									1					
Southern Methodist U.		1									1					1
Southwestern Louisiana Inst.		1									1					
Stanford U.	1	1									1					
Swarthmore College		1														
U. of Syracuse		1									1					
Texas A. & M.		1														
U. of Texas											1 &2g		1			1
Texas Technical College											2					
U. of Toledo											2					
Tufts College	2	1														
Tulane U.		1									1					1
Union College		1									1					
U. of Utah (School of Arts & Mech.)		1									1					1
Utah State A. & M.*																
Vanderbilt U.		1									1					
U. of Vermont		1									1					
U. of Virginia		1														
Virginia Military Inst.		1	1								1					
Virginia Poly. Inst.		1	1								1	1				
State College of Washington		1									1 &1g					
U. of Washington	1 &1g	1									1g			1g		1g
Washington U.	1g	1									1		1g			
Wayne U.		1	1								1					
West Virginia U.		1									1 &1g			1g		1g
U. of Wisconsin		1									1					
Worcester Poly. Inst.		1									1					
U. of Wyoming		1									1 &1g					
Yale U.	2	1														
Number of Schools Offering Courses or Course in Subject:	29	93	15	3	4	6	2	2	4	4	86	9	11	17	1	19
Total Number of Undergraduate Courses in Subject:	23	94	14	1	0	1	0	1	1	2	89	9	5	10	0	15
Total Number of Graduate Courses in Subject:	9	2	3	2	4	6	2	1	5	3	21	0	9	10	1	7

g Indicates graduate course.

* No catalogue of courses for year 1948-49

lightly in one term. For example, the Civil Engineering department of Catholic University of America, at Washington, D. C., requires seniors to take a 16-week railroad course (1 semester) with two hours of class each week. Motive power, train resistance, valuation, yard layout, signaling, train rules, and maintenance of roadway and track are all taught, but in a necessarily sketchy manner.

Many Schools Emphasize Highways

Where highway engineering is emphasized, three or more of the following subjects are taught: (1) Pavements and materials; (2) highway traffic engineering; (3) highway finance and administration; and (4) highway soil engineering. Where highways are not emphasized, most colleges offer one or more general highway engineering courses. In most cases the subject-matter in these courses covers types of pavements, drainage, visibility, lighting, traffic control and highway financing. Courses on airports are design courses on proper location of ports, position of runways, airport buildings and control structures.

General transportation courses taught in 29 of the schools embrace instruction on problems of all major types of transport, brief description of each, and a study of their interrelationship and coordination. It is evident that for their size and the extent of their engineering operations and number of engineers employed, the railroads are not adequately treated in the technical schools.

Colleges, with few exceptions, will provide courses for which there is a demand. Many courses on electronics, air conditioning, aeronautics and construction are offered by most technical schools primarily because large numbers of graduates enter these fields and students want these courses and take an interest in them. Schools will provide courses in railway engineering if there is sufficient student demand or interest. But the students do not want railway engineering courses. They consider them a waste of time since very few civil engineering students plan railroad careers.

It is apparent to anyone dealing with engineering students that most of them are almost antagonistic towards the railroad industry. Low salaries, slow advancement, seniority and long hours are among the reasons expressed by students for this attitude. But the outstanding reason, not often expressed, is a fear of insecurity, based on the pessimistic assumption that the railroads are on the way out, and that their func-

tions will shortly be taken over by trucks, buses, pipe lines and airplanes. Graduates do not want to tie their futures to an industry they feel is losing out to competitive industries.

The railroads should do something about this situation. They must increasingly depend on college graduates for engineering and supervisory positions because today the type of man the railroads want and need does not end his education with high school as in the past, but goes on to college. Railroad managements are realizing this, since it is becoming more difficult for them to find in the ranks of their employees men suited by temperament or ability for supervisory work. Another point that should not be forgotten is that most engineering students will eventually find their way into positions of responsibility in industries and concerns that provide the bulk of railroad traffic. Unless they study the problems of transportation and the railroads in school, they will take with them as graduates erroneous ideas of railway transport and its relationship to industry.

The remedy is to explain and demonstrate to students the true position of the railways, and to convince them that the railroads are now, and will continue for many years, a vital part of the nation's economy. The advantages of railway work and the actual opportunities for advancement must be made clear to the students. More railroads should have men on their staffs speak before the students of colleges situated along or near their lines, at least once every year. Student engineering societies are continually looking for interesting speakers from industry and will welcome such action on the part of nearby roads. Another excellent means of putting the railway position before students is for the railway companies to present subscriptions to *Railway Age* and other factual railway magazines to college engineering libraries.

If the railroads can awaken the interest of students in the problems of basic transportation, more schools will provide courses in railway engineering, and engineering graduates in the future will have a more enlightened and favorable attitude toward the railroads.

Advantages of DYNAMIC BRAKING

Tests run in both freight and passenger service show economies that are related to wheel and brake shoe wear

By J. P. MORRIS
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The Diesel locomotive with its high availability has distinct advantages in additional savings that are generally not credited to the reduction in locomotive operating and maintenance costs. One of these is the dynamic brake, which has generally not been taken full advantage of.

In view of the fact that material and labor costs were increasing, we on the Santa Fe decided that we would make a survey to determine where it would be best to reduce our costs when possible. We decided that, having made substantial savings by the use of the dynamic brake in heavy-grade territories, we would see what the savings would be in the level territories.

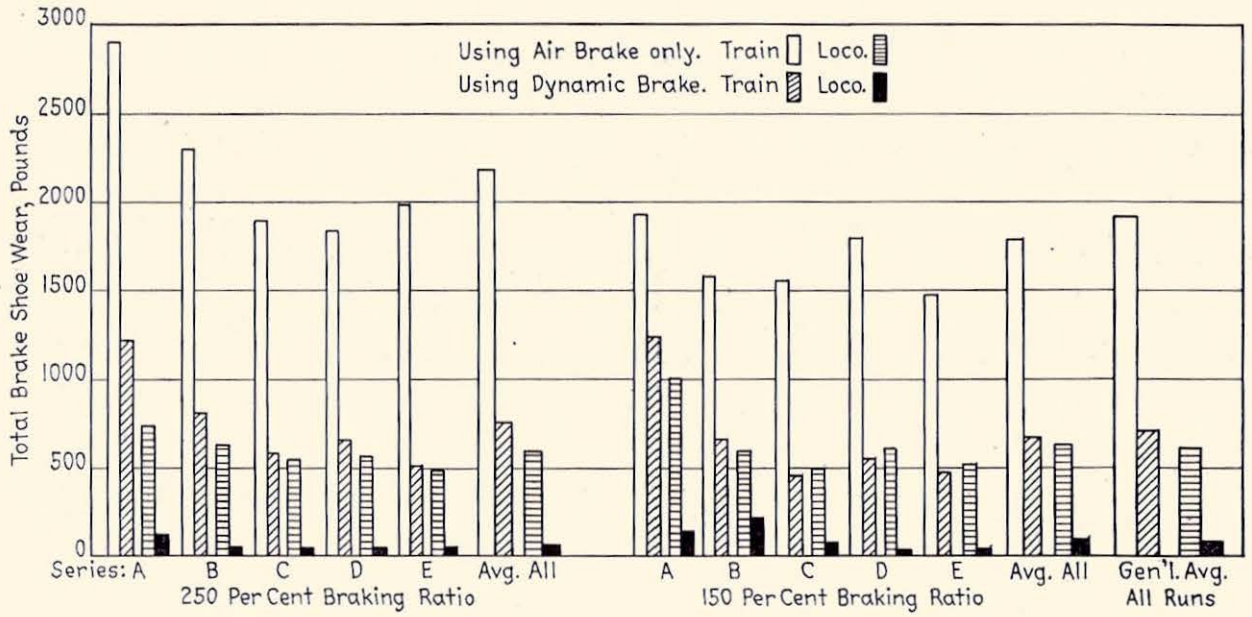
We took into account the first test made with an Electro-Motive demonstrator locomotive equipped with the dynamic brake. In January and February, 1940, an order for five of that type of locomotive was placed for the Santa Fe. The dynamic brake applied to those five locomotives was the two-stage brake with two operating positions (B-1 and B-2) on the brake controller. It was necessary to reduce the speed by the use of the air brake to a definite point before application of the electric brake. The characteristics of the brake were as follows:

	Gear Ratio and Wheel Diameter 59/18-40 in.	61/16-40 in.
Maximum speed at application of brake — m.p.h.		
B-1 position	28	25
B-2 position	15	13
Maximum speed at release — m.p.h.	15	13

	Gear Ratio and Wheel Diameter 59/18-40 in.	61/16-40 in.
Approximate speed of over-load of brake — m.p.h.		
B-1 position	32	27
B-2 position	21	18

The original brake was a holding brake with limited functions and its major accomplishments were: (1) by test it was found the dynamic brake absorbed from 25 per cent to 50 per cent of the energy formerly required of the air brakes to control the speed of trains on heavy descending grades; (2) reduction in brake shoe and wheel wear; (3) elimination of stops formerly made to cool wheels and brake shoes; and (4) a saving of time of approximately one hour in each direction between Winslow, Ariz., and San Bernardino, Cal.

While these results were encouraging, it was felt that additional benefit could be gained on the Santa Fe by the development of a multi-stage brake. In October, 1941, the perfected multi-stage brake suitable for all operating grade conditions and with an operating speed range of 10 to 60 m.p.h. in freight service was developed. With this brake, the motor field circuits are connected in series to the main generator. When the controller is



A. Chilled-end Santa Fe brake shoe, 13¾ in. long. Clasp brakes. No brake-beam stabilizer.
B. Nonchilled-end A. A. R. brake shoe, 13¾ in. long. Clasp brakes. Brake-beam stabilizer.
C. Nonchilled-end carbon insert A. A. R. brake shoe 13¾ in. long. Clasp brakes. Brake-beam stabilizer.
D. Nonchilled-end brake shoe, 18½ in. long. Clasp brakes. Brake-beam stabilizer.
E. Nonchilled-end carbon-insert brake shoe, 18½ in. long. Clasp brakes. Brake-beam stabilizer.

Total brake shoe wear per round trip between Chicago and Los Angeles, Cal.

TABLE 1 — SUMMARY OF BRAKE TESTS

	Distance brakes used between Winslow, Ariz., and San Bernardino, Cal. Total 451 mi.			
	Dynamic brake		Air brake	
	West-ward	East-ward	West-ward	East-ward
E.M.D. Diesel locomotive 103 Air brakes only			125	100
A.T. & S.F. Diesel locomotive 100 Two-stage dynamic brake	60	35	90	85
A.T. & S.F. Diesel locomotive 106 Multi-stage dynamic brake	185	130	56	52

TABLE 2 — SLID-FLAT AND BRAKE-BURNED WHEELS

	1937 - 1942 Before dynamic braking	1943 - 1948 After dynamic braking
Miles per pair of slid-flat wheels:		
Freight	1,838,983	3,029,611
Pasenger *	954,019	1,164,763
Miles per brake–burned wheel	88,542	422,173

* Only a limited number of passenger Diesel locomotives were equipped with dynamic brakes prior to 1947.

TABLE 3 — REDUCTION OF BRAKE SHOE WEAR

	Brake shoe wear, lb. per round trip		
	Air brakes only	Dynamic plus air brake	Reduction
150 per cent braking ratio:			
Train	1,667.3	677.9	989.4
Locomotive	641.7	97.7	544.0
Total	2,309.0	775.6	1,533.4
250 per cent braking ratio:			
Train	2,178.4	749.9	1,428.5
Locomotive	590.7	61.0	529.7
Total	2,769.1	810.9	1,958.2
Average all runs with both braking ratios:			
Train	1,922.9	713.9	1,209.0
Locomotive	616.2	79.4	536.8
Total	2,539.1	793.3	1,745.8

moved to the braking position, the motor field circuits are reversed and the motors become generators. Movement of the brake controller varies excitation of the field circuits and the armature current generated is dissipated through fan controlled grids.

Application to Freight Locomotives

The first brake of this type applied to Santa Fe locomotives was on a 5,400-hp. Diesel freight locomotive in service in March, 1942, and it has been applied on all locomotives delivered since, both freight and passenger.

A summary of early tests of both the two-stage and multi-stage dynamic brake as compared with the air brake for controlling trains on heavy descending grades is given in Table 1. The results of the use of the dynamic brake are reflected in the records of slid-flat and brake-burned wheels. A comparison of statistics on these items for two six-year periods, before and after inauguration of the dynamic brake, is shown in Table 2.

As a result of experience gained in the use of the dynamic brake in heavy-grade territory the Santa Fe undertook extension of its use for control of train speeds on all territories, both on level and on descending grades.

Beginning in the fall of 1948 and extending into May, 1949, a series of road braking tests of high-speed passenger trains were made and in order to get complete information, the dynamometer car was used to record the data from which information could be developed as to the practical use of the dynamic brake on all territories.

A series of test runs were made on the "El Capitan,"

a lightweight, streamline, all-coach train between Chicago and Los Angeles, operating on a 39-hr. 45-min. schedule for the 2,227-mi. run. Two series of test runs were made, one using 150 per cent braking ratio on the passenger cars without high-speed governor control, and the other with 250 per cent braking ratio on the passenger cars with high-speed governor control. Five round-trips were made in each series, using air brakes only, and five round-trips using dynamic brake everywhere possible, supplementing with air brakes when necessary. On each of the round trips, a different type and size of brake shoe was used on the passenger cars.

The detail data from the 20 round trips or approximately 90,000 miles of road testing are now being analyzed to evaluate the merits of various brake shoes used.

Table 3 shows the comparative results accomplished with the use of the dynamic brake in reducing brake shoe wear. Data for all runs have been equated to an average 13-car train. With full use of the dynamic brake everywhere possible, the average values for all runs show a reduction of 96.0 per cent in train brake shoe wear and 87 per cent in locomotive brake shoe wear. Similar test runs made on freight trains on three different territories gave the data shown in Table 4.

As a result of the tests, bulletined instructions have been issued to all enginemen with a copy of the chart covering the detail method of using the dynamic brake for controlling the speed of passenger and freight trains.

These instructions give the sequence of operations for applying the dynamic brake on Electro-Motive, Alco and Fairbanks-Morse locomotives. The instructions make it mandatory to use the dynamic brake wherever possible. They also provide that the standard instructions for maintaining and operating air-brake equipment are applicable when using air brakes on trains in conjunction with the dynamic brake on the locomotive.

During the test runs, particular attention was paid to the handling given the train for smoothness of operation. In general there was little rough handling or shock due to slack action from the use of the dynamic brake.

The Economic Value

The economic value of the dynamic brake may be summed up as follows:

1. Reduction in the number of overheated wheels in freight equipment as well as passenger equipment.
2. Elimination of long and costly stops for wheel cooling in heavy grade territories.
3. Reduction in the number of thermal cracked wheels.
4. Reduction in wheel wear as a result of reducing the use of the brake shoes against the wheels to a minimum.
5. Reduction of wearing in parts of the brake rigging and attachments.
6. Reduction in the number of failures of brake beams and brake beam attachments.
7. Reduction in the number of derailments caused by failures of brake beams and brake beam attachments.
8. The ability to reduce the speed of the train with the dynamic brake and air brake in conjunction thereto without the attendant brake shoe and wheel damage.
9. Better train handling in regard to slack action where the dynamic brake is properly used.

TABLE 4 — TEST RUNS IN FREIGHT SERVICE

Corwith, Ill., to Argentine, Kan., with three-unit locomotive, 4,050 hp., handling 75 cars, 2,625 tons, westbound; 80 cars, 4,000 tons, eastbound, 447 miles each way.

	Brake shoe wear, lb. per round trip		
	Air brake only	Dynamic plus air brake	Reduction
Train	301.1	174.9	126.2
Locomotive	48.0	30.0	18.0
Total	349.1	204.9	144.2

Argentine, Kan., to Cleburne, Tex., with three-unit locomotive 4,050 hp., handling 60 cars, 3,000 tons in both directions, 579 miles.

	Brake shoe wear, lb. per round trip		
	Air brake only	Dynamic plus air brake	Reduction
Train	235.0	67.2	167.8
Locomotive	24.0	15.5	8.5
Total	259.0	82.7	176.3

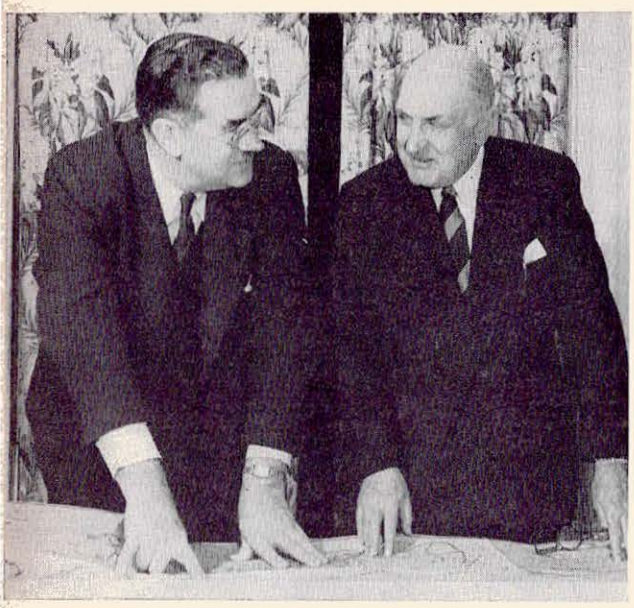
Belen, N. M., to San Bernardino, Cal., with four-unit locomotive, 5,400 hp., handling 80 cars, 3,500 tons in both directions, 723 miles.

	Brake shoe wear, lb. per round trip		
	Air brake only	Dynamic plus air brake	Reduction
Train	1,094.4	416.0	678.4
Locomotive	245.1	40.4	204.7
Total	1,339.5	456.4	883.1

Of these items, the thermal cracked wheel condition existing on American railroads is one that has given railroad officers a great deal of concern, for the wheel manufacturers have not as yet developed a wheel that is free from thermal cracking when subjected to the heat imposed by the use of brake shoes applied to the wheels.

The dynamic brake offers positive relief from this condition and if used conscientiously by engine crews, it will reduce the number of thermal cracked wheels, which in the past have proved very costly not only from the standpoint of the labor involved in removing, turning and remounting of the wheels, but from the hazard involved due to wheel failures which generally result in derailments and accidents.

YE OLD ENGLISH TAVERN CARS, introduced into service this past summer on Britain's nationalized railroads, have failed to find popularity with the public, and in general have aroused derision and jesting criticism in newspapers and magazines of all types and political persuasion. It is possible, however, that they may prove popular with American tourists



Mr. Gordon (left) and Mr. Vaughan look over a map of the C. N. system

Donald Gordon to Succeed R. C. Vaughan As Canadian National Head

The new president will draw upon his administrative and financial background to cope with the complexities of a government-owned railway

On December 31, 1949, Robert Charles Vaughan will retire as president and chairman of the board of the Canadian National Railway System, a position he has held for nine years. He is to be succeeded by Donald Gordon—a man who may be a stranger to some railroaders but whose name was as familiar to Canadian householders for several years of wartime austerity as their own. Both men gathered respect for their abilities while still young men. Both worked their own way up. Were the term "Horatio Alger" not overused already, it would be appropriate to use it here.

The structure of the Canadian National family, the leadership of which Mr. Gordon will inherit from Mr. Vaughan, is complex—comprising as it does a myriad of services. Each has its diversified problems which must be dealt with. It is no small inheritance.

The position of president and chairman of the board of such an organization is no job for a shy man, nor for one who ruffles easily. Not only must the man be capable of overseeing the many activities of the C. N. System, but at the end of each year he must explain and justify, item by item, the year's earnings and expenditures at a face-to-face meeting with a Parliamentary committee, the committee which must consider and approve the appropriation to be made by Parliament toward the road's expenses for the next year.

The Financial Problem

The Canadian National System was formed in 1923 as successor to the amalgamation of government-owned lines with a number of railroads on the verge of bankruptcy. Since its very inception it has had a hard time of it financially. When taken over by the government three of the corporations were insolvent and there was a backlog of deferred maintenance.

Three factors, the C. N. management feels, keep it operating for the most part at a loss. First, had the predecessor roads not been denied the recourse of receivership, it is possible that the fixed-charge debt would have been adjusted downward in line with a reasonable earning potential. As it was, when the Canadian National System was formed, the government took the position that the investors should be protected against loss, and the funded public debts of the embarrassed companies were carried on as obligations of the new organization.

On December 31, 1922, the principal amount of funded debt held by the public was $804,503,144, with annual fixed charges of $35,623,415. At its very outset, the management felt it was strangled by a debt even the interest on which was beyond the earning capacity of the road.

A second further financial drain is the obligation to operate a considerable mileage of marginal and non-paying lines. Many C. N. lines compete with each other. Much mileage is useless for the purpose originally intended; nevertheless the road is required to continue its operation either in the public interest or because it traverses country in the process of development. Of its 23,300 miles of track the C. N. makes the following classification with regard to earnings:

More than self-sustaining	10,500 miles
Marginal	7,100 miles
Sub-marginal	5,700 miles

The third element which affects the Canadian National's financial situation unfavorably is the fact that freight rates have not kept pace with the increased costs of labor and materials. Relief has been granted several times but too little and too late. A further rate increase application is pending.

The Canadian National in its current submission to the Royal Commission on Transportation, which is exploring the national transportation policy, makes some recommendations of its own as to how its situation might be remedied and how the system might eventually operate more nearly within its income. Its management contends that by the very nature of its organization it not only was committed to an indefinite period of recurring deficits, but was denied also the opportunity to make surplus earnings with which to reduce interest-bearing debts. The company has asked the Royal Commission, as it had previously requested Parliament, to approve

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D. & R. G. W. IM
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Improved lighting as an a
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provide well-diffused light
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An example of the lighting

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Much of Mr. Vaughan's term as president has revolved around the decisions and adjustments of a wartime economy with the reactions that accompanied the transition to peacetime operation. Traffic, revenues, and costs all increased tremendously. There was the necessity to improve and add to existing plant, a matter of great difficulty under war conditions.

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His pleasures now are simple and quiet: radio programs, driving his car when gasoline shortages are not a problem. His reading for the most part lies in biography and economics, although he admits to a detective story or two now and then. He is reputed to like a game of bridge, but says modestly that his golf score is no better than average.

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The platform body is equipped with all-steel end and side gates, which are removable.

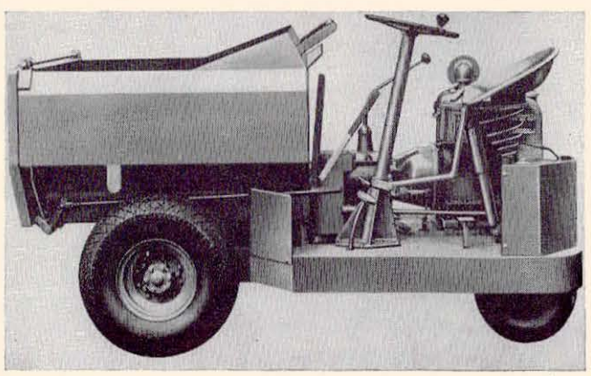
This unit is powered by a Wisconsin Model TF, 2-cylinder engine which can drive the truck at speeds up to 15 m.p.h., according to the manufacturer. A heavy duty transmission provides 3 speeds forward and one in reverse. Overall length, width and height are respectively, 85½ in., 42 in. and 50¼ in. Ground clearance is 7½ in. while the wheel base is 56 in. and the turning radius of the body is 78½ in.

King Wheel-Slide Indicator And Control

The King wheel-slide indicator and control, recently developed by the Spring Packing Corporation, Chicago, is designed to prevent serious accidents and casualties caused by the power wheels on Diesel and electric locomotives sliding as a result of armature-shaft bearings freezing, pinion gears shearing, or any other condition which might cause the power wheels to slide. This device applies the train brakes when from any cause power wheels slip above a predetermined speed. It differs from other wheel-slide indicators and controls which reduce brake-cylinder pressure when wheels begin to slip or slide in brake applications.

The King equipment consists of (1) mechanically actuated control switch (*normally closed*), included in a housing fastened to the cover plate of the combination journal-bearing box and driven from the end of the axle by means of an A.A.R. spline fitting and spline-drive shaft; (2) a master switch, the same as described above but *normally open*, which may be driven from either a power wheel or an idler wheel;

Below—The Kal-Truk with dump body. Left—The platform body can take a 3,000 lb. load, and dumps to facilitate unloading if desired



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to accomplish a great deal quickly and quietly. Those who have worked under him remark that the reason he always has time for one more thing is his ability to stick to the matter at hand without sliding off on a tangent.

Donald Gordon was born in Scotland on December 11, 1901. His father was a watch-maker of Old Meldrum, Aberdeenshire, before he packed his family of six off to Toronto to live. At first, Donald, thirteen at the time, was the sole wage earner of the family. A job in a box factory, pulling out box ends after they had been cut, brought in $6 a week. That lasted only until the truant officer caught up with young Donald and pointed him back toward the portals of learning. At last reaching the legal school-leaving age of fourteen, he went to work again, first as a blacksmith's helper, then as an electrician's helper.

Donald discovered that a magazine delivery route could be very profitable, and that if one was good two or three were even better. So he invested in a bicycle, which solved part of his problem. Enterprise on his part took care of the transporting of so many magazines. In those days of open-end street cars Donald was able to heave his bundle of magazines on to the rear end of a car, beat the car across town on his bicycle, and then retrieve his magazines. It worked, too—for a while.

Gordon's school principal took an interest in this former student and told him of an opening as clerk in the Bank of Nova Scotia, a job he accepted with alacrity in 1916. Donald Gordon profited from what might have been a dull eight years by going to night school. He took correspondence courses, too, as well as some of the bank's own extra-mural courses, giving himself the equivalent of university training. Within four years he was working in the head office, and in 1924 joined the bank's inspection staff.

During an inspection trip in 1925, Mr. Gordon missed his train out of St. Stephen, N. B. Taking the next train, he found friends aboard who introduced him to a young lady from Newfoundland, named Maisie Barter. It was a train well-missed. Within a year Miss Barter became Mrs. Gordon, and thus began what their friends refer to as "the Gordon team." Donald Gordon says a bit wryly that his wife has an "infuriating effrontery" to believe that he can do anything he sets his mind to. Otherwise, he says, being naturally inclined to laziness he might have had a nice peaceful life.

In 1926, he became assistant chief accountant of the Bank of Nova Scotia, and in 1930 was made assistant manager of the Toronto branch. It was in this position that he came to the attention of Graham Towers, governor of the newly formed Bank of Canada. Mr. Gordon became secretary of the Bank of Canada under Mr. Towers in 1935 and became deputy governor three years later. It is said of the Towers-Gordon partnership: "Towers, the leader of ideas, the 'scientist' of finance; Gordon, the practical banker and administrator."

Two Difficult Administrative Jobs

When the war came in 1939, the governor of the Bank of Canada and his deputy had already worked out the principles of foreign exchange control and the administrative machinery from which evolved Canada's Foreign Exchange Control Board. Adoption of this exchange control policy, at a time when Canada was running behind on international trade at an alarming rate, has been credited with preventing collapse of the Canadian dollar.

In 1941 came the beginning of Donald Gordon's next big job. Canada had been using all the traditional methods to fight inflation, to no satisfactory avail. In the minds of a group of officials in Ottawa grew the possibility of winning the battle against runaway inflation by a complete freeze of all prices. Donald Gordon was suggested for the job of organization of such a system, refused, but finally, in the name of war duty, was prevailed upon by Prime Minister King, who already had announced that price controls would go into effect December 1, 1941. Under Mr. Gordon's weaving grew the tapestry of a war-emergency price control system which helped keep Canada on the black side of the books, and which system came in for study by Donald Nelson and Leon Henderson when the United States set up its own price control system.

After the arduous tasks of foreign exchange control and price control administration had been completed, and with the ending of the war, Mr. Gordon returned his full attention to the Bank of Canada, until the announcement on October 11, 1949, that he had been appointed to succeed R. C. Vaughan as president of the Canadian National. Later he was named also chairman of the board. Since that time Mr. Gordon has been engaged in an intensive study of the C. N. system, from the earliest days to the present.

When asked if he welcomed the change from the financial field to railroading, Mr. Gordon stated that he is "always excited by a new challenge" but that there would not be a terrific change, since the motivation behind both the banking system and the Canadian National "is to develop the country. What helps the country helps the Canadian National, and the converse."

Like Mr. Vaughan, Mr. Gordon has been too busy along the line to get in much play. If one is to believe what one hears, however, life around Mr. Gordon is seldom stodgy or dull, even during business hours. His sense of humor is never very far away, but the fun he pokes is more often directed at himself than at others.

Mr. Gordon's ideas of fun are both quiet and noisy. When he doesn't have to do homework evenings, he may go in for a novel—says Orwell's "1984" was really

something. He reads "whodunits" and frankly admits "the more blood and bodies, the better." He enjoys poetry, particularly that of Robert Burns. He likes music, both to listen to and to join in on, and has been known to sing Scotch airs with a minimum of urging by friends. Apparently there are differing schools on appraising the quality of his musical ability—the chief derrogation (attributed to an Irish, and therefore, dubious, friend) being that Donald Gordon's song certainly lacks not when it comes to volume. He plays a little bridge also.

Along the athletic line, Mr. Gordon, according to his wife, used to be an expert canoer. He played a little golf before the war but hasn't been out since.

The Gordon's favorite place for relaxation is their 150-acre "bush-lot" some fifteen miles northeast of Ottawa, where Donald Gordon has appeased his creative bent with all manner of carpentry. Entirely isolated, the property boasts a small lake in its dead center. On the lake is a 35-foot floating "island," resting on steel drums and supporting a full size "genuine Dutch windmill." Inside the room in the windmill is a bed, from which one can fish in comfort through a trapdoor opening down into the lake.

His attitude toward people is that it's the individual who matters. He feels that the worker must be given a feeling that he is valuable as an individual personality, that the employee believe that the boss cares about his welfare and aspirations. An attribute that has won for Donald Gordon many friends, according to those who know him, is his always having had time for others and sympathy for their problems.

Regarding the economic future of Canada and its reflection on the railways Mr. Gordon comments: "It is only necessary to review the economic and railway development of Canada during the first half of the present century to believe that such development in the second half will be no less great, proportionately. I have unbounded faith in the future of this country, and it is shared by most Canadians."

D. & R. G. W. IMPROVES WORKING CONDITIONS WITH BETTER LIGHTING

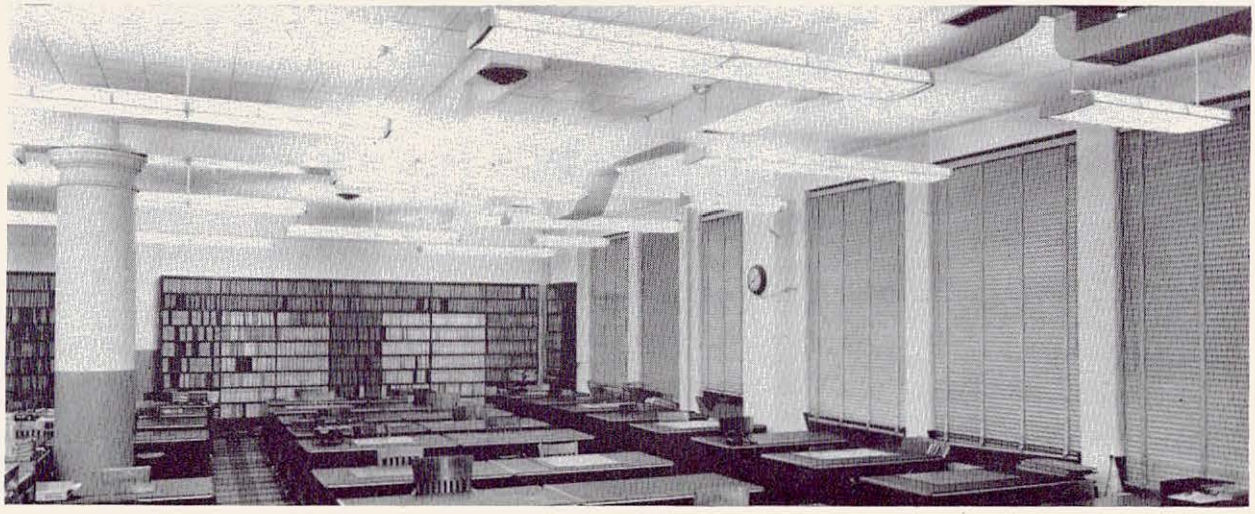
Improved lighting as an aid to better vision and better work is a part of the rebuilding and modernizing program of the D. & R. G. W. in relighting its main offices in Denver, Colo.

The old, six-lamp, 40-watt incandescent fixtures formerly used in the administration building offices have been replaced by Grenadier fluorescent fixtures which provide well-diffused light with an initial intensity of 50 footcandles on a horizontal plane at the desk tops. The new installation has practically eliminated glare and this has been found particularly important in one department where thousands of passenger tickets with shiny surfaces had made fatigue from glare and underlighting a serious condition. The new lighting has also disposed of difficulty in checking way bills, some of which are written faintly in pencil. Headaches due to eye strain in that department were common before the fluorescent installation improved the seeing conditions.

The fixtures are suspended from the ceiling in a staggered arrangement, with a distance of 8 ft. 3 in. between rows, and 8 ft. between the ends of the 8-ft. fixtures. Pneumatic tubes and air conditioning ducts on the ceiling made it impractical to utilize continuous rows. The mounting height is 11 ft. above the floor. The lamps are 3,500 deg. K white, with two 40-watt lamps to each 4-ft. section.

John T. Fallon, electrical engineer of the D. & R. G. W., met some opposition in the planning stages of the installation from some who thought that an intensity of 35 footcandles would be sufficient. It is now generally conceded, however, that the small difference in cost between maintaining a 35- and 50-footcandle level is amply justified by the effectiveness of the lighting.

Photo Courtesy of the F. W. Wakefield Brass Company



An example of the lighting now used in the D. & R. G. W. administration building offices

New and Improved Products of the Manufacturers

Sanding Nozzle For Diesel Power

The latest sanding nozzle developed by Fairbanks, Morse & Co., 600 South Michigan avenue, Chicago 5, features ease of operation and a mechanism to minimize the spilling of sand during the filling operation.

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A 3,000-lb. capacity truck which can be used as a flat-bed burden carrier as well as for handling bulk materials is a new product of the Kalamazoo Manufacturing Company, Kalamazoo, Mich. The bulk-handling dump body is standard equipment on this truck and its capacity is 2/3 cu. yd., while the platform body is available as extra equipment.

The platform body is equipped with all-steel end and side gates, which are removable.

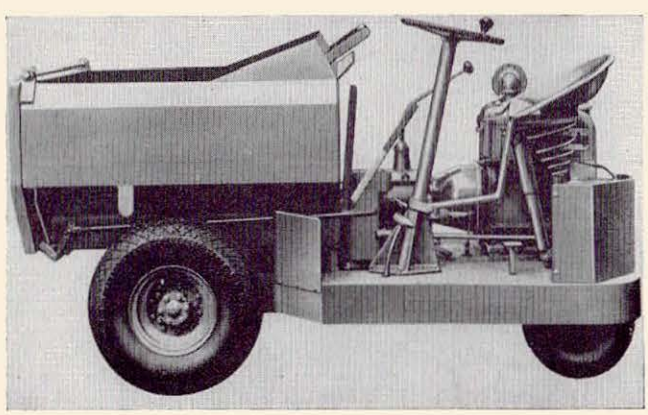
This unit is powered by a Wisconsin Model TF, 2-cylinder engine which can drive the truck at speeds up to 15 m.p.h., according to the manufacturer. A heavy duty transmission provides 3 speeds forward and one in reverse. Overall length, width and height are respectively, 85½ in., 42 in. and 50¼ in. Ground clearance is 7½ in. while the wheel base is 56 in. and the turning radius of the body is 78½ in.

King Wheel-Slide Indicator And Control

The King wheel-slide indicator and control, recently developed by the Spring Packing Corporation, Chicago, is designed to prevent serious accidents and casualties caused by the power wheels on Diesel and electric locomotives sliding as a result of armature-shaft bearings freezing, pinion gears shearing, or any other condition which might cause the power wheels to slide. This device applies the train brakes when from any cause power wheels slip above a predetermined speed. It differs from other wheel-slide indicators and controls which reduce brake-cylinder pressure when wheels begin to slip or slide in brake applications.

The King equipment consists of (1) mechanically actuated control switch (*normally closed*), included in a housing fastened to the cover plate of the combination journal-bearing box and driven from the end of the axle by means of an A.A.R. spline fitting and spline-drive shaft; (2) a master switch, the same as described above but *normally open*, which may be driven from either a power wheel or an idler wheel;

Below—The Kal-Truk with dump body. Left—The platform body can take a 3,000 lb. load, and dumps to facilitate unloading if desired



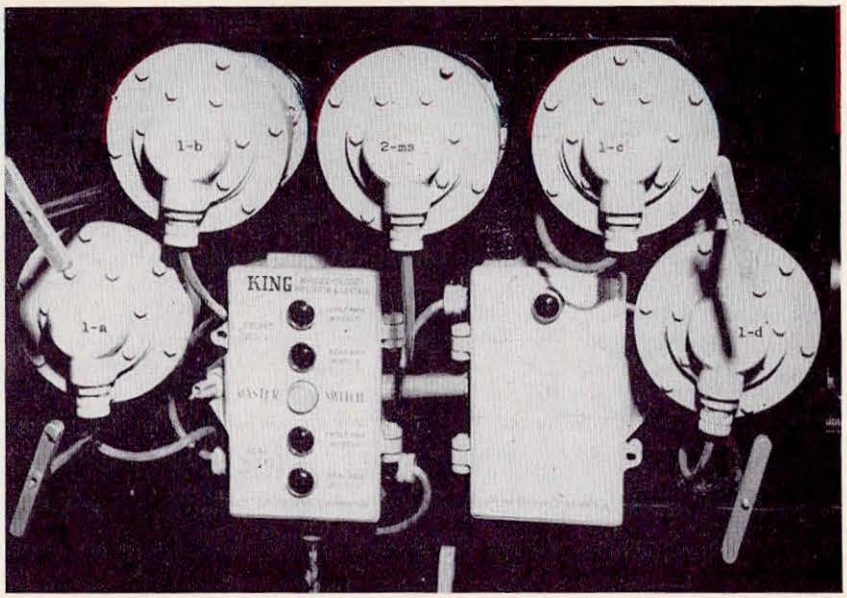
(3) an indicator box which warns of wheel sliding and indicates the pair of wheels involved and the truck in which they are located; (4) a time delay and relay switch; (5) an air-operated solenoid valve; and (6) an air-brake applicator valve.

Parts 1 and 2 are located on the trucks of all locomotive units. Parts 3, 4, 5 and 6 are located inside the cab on A or head-end units only. The device operates independent of all other locomotive equipment except to apply the air brakes. Electrical energy is obtained directly from the storage battery, or in case of electric locomotives from a transformer. If a locomotive consists of more than one unit, then the circuits are made continuous by the use of jumpers between adjoining units, similar to those now used with electro-pneumatic brakes.

In operation, after the speed of the locomotive reaches a set point, the master switch is closed and electric energy is then available at the control switch on each pair of powered wheels. If all wheels are turning, then the control switches are *open* and this will be indicated by a green light, only, on the indicator panel. Should a pair of powered wheels start sliding from any cause, at or above the set speed, then in addition to the green light on the indicator panel a red light will show, indicating which pair of wheels is sliding and in which truck they are located. At the same time, an alarm will be sounded.

If the speed of the locomotive is not reduced below a set speed within a suitable time, the time delay and relay switch (4), being energized, will cause the air-operated solenoid valve (5) to function. When this valve is energized, it operates the air-brake applicator valve (6), which in turn automatically applies the locomotive and train brakes and will continue to apply them until the speed has been reduced below the predetermined speed adjustment of the master switch. The brakes may then be released, and the defective unit set out, or at least the main track cleared as long as the speed does not exceed the limiting speed adjustment of the master switch.

The brake applicator valve is a simple differential valve, applied in the main-reservoir supply line, between the main reservoir and the automatic brake valve, and in the brake pipe. In normal or operating position, main reservoir pressure simply passes through the body of the valve, through the feed valve and automatic brake valve, and back through the brake pipe. Whenever the brake applicator valve is operated as the result of a wheel-slide indication, main-reservoir pressure is admitted to the outer side of the large differential piston, by action of the air-operated solenoid valve, thereby balancing the pressure on each side of the large differential piston. The small differential piston then moves the differential valve in the opposite direction, causing the slide valve of the differential valve to close the communication between the main reservoir and the automatic brake valve, and opening a service application valve in the brake-pipe chamber of the brake applicator valve. This vents brake-pipe pressure to the atmosphere through the service exhaust port of the brake-pipe chamber of the brake applicator valve and causes a full service application of the pneumatic brakes.



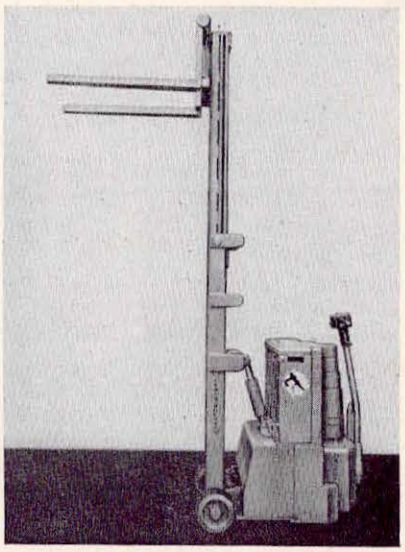
Control switches on powered wheels are shown at 1-a, 1-b, 1-c, 1-d. The master switch 2-ms is on either a powered wheel or an idler wheel. These go on all locomotive units. The signal indicator boxes and all other control mechanisms go on A units only

Low Capacity Jackstacker

Just announced by Lewis-Shepard Products, Inc., 265 Walnut st., Watertown 72, Mass., is a 1,000 lb. capacity "walkie" electric fork truck, maximum rated capacity being obtained when the load is no more than 48 in. in length. Models are available with or without telescoping masts, with fork elevations possible up to 130 in. The overall length of the unit, less forks, is only 46½ in. A new shaft mounting permits the forks to be hinged back over the truck quickly, so that it may be placed aboard small elevators or on trucks, for movement from one place to another.

The master drive unit of this fork truck, which includes traction motor, gear drive, contactor panel, and handle complete with all controls, can be replaced in a very short time, the manufacturer states.

Other advantages claimed for this unit by the builder are: an adjustable by-pass release valve insures that the truck will not pick up more than its rated load; it is impossible to reverse the motor while going in any given direction; electric brakes are applied merely by releasing the handle triggers; sealed ball bearings and self-lubricating bushings throughout; any or all controls can be operated with handle in any position, since all controls are in the handle head; and the truck cannot be started in high speed.



SAWYER REPORT

(*Continued from page* 53)

which is concerned with the long-range maintenance of adequate transportation at non-discriminatory rates." A footnote says "it is recognized that there are occasional situations where rates which fail to cover all costs are justified but departures from cost standards should be permitted only upon a convincing show of necessity for the promotion of traffic or conservation of the carrier's revenues, not at the expense of competing carriers qualified to perform the service more economically, nor in cases where unjust discrimination would result." Later on the matter is put this way:

"The general position which this report advances is that if another type of carrier or another carrier of the same type can perform the service at a profit, it is entitled to the business and the carriers which are being protected should restrict themselves to operations in which they have a clear economic advantage. This general principle is set forth in the Transportation Act of 1940 as basic national transportation policy."

The report's suggestions that there might well be some relaxation of regulation of carriers other than railroads and pipe lines run particularly to the certificate and permit phases of regulation. This authority to "control entry into business" is called a "very real power," and a study is suggested to determine whether "substantial" benefits to the public have resulted. If not, the report adds, "there would be little justification for continuing restrictions which limit the opportunity of the American citizen to engage in business." It goes on to cite B.I.R. reports which complained of restrictions placed by the I.C.C. in motor carrier certificates; and it refers to recent commission decisions that "suggest an interpretation of the statute which would in effect whittle away the exemptions for carriers of agricultural commodities which were specifically provided by law."

Repeal Bulwinkle Act?

Meanwhile continued regulation of railroads and pipe lines on the present basis is found "justified in the public interest." In its brief comment on the regulation of activities of carrier rate conferences, the report suggests that consideration be given to repeal of the Bulwinkle-Reed Act (now section 5a of the Interstate Commerce Act), and of like provisions of the Merchant Marine and Civil Aeronautics acts—"unless effective and continued supervision of the conference is maintained by the regulatory agencies and unless more specific standards for prescribing rates are developed than at present." In the latter connection, the report had said previously that regulatory agencies should require that rates published as a result of carrier conferences "be reasonably related to a fully distributed cost standard."

The recommendation calling for compulsory consolidation of railroads is embodied in the report's discussion of the "promotion of carrier efficiency." It is bottomed on reports made on the subject by the former Federal Coordinator of Transportation and the B.I.R. A cited estimate by the latter is that "increased efficiency would save the railroads about $1,400 million on an annual basis." The recommendation is then set out as follows:

"The problem of consolidation is particularly urgent in the railroad field. . . . Every effort should be made through the promotion or the requirement of consolidations and unifications and through the elimination of unprofitable services to reduce the overall cost of railroad operations with a view to minimizing the rate burden which now falls upon the shipper of carload freight. Activities with the objective of obtaining the most efficient railroad plant should be initiated immediately. The carriers can undoubtedly do much in this direction on their own initiative but it is equally clear that they will need active support and direction from the federal government. This may involve a mixture of incentives and compulsory action. One incentive requiring immediate consideration is a more liberal policy with respect to abandonments. Further incentives should be explored."

Would Revise Mail Pay

With respect to the handling of mail, the report suggests a reconsideration of the method of paying the railroads for the transportation of so-called bulk or storage mail. The present arrangement under which the mail-pay rate applies for empty as well as loaded movements, as the report puts it, "appears to place a premium on inefficiency by making it profitable for the railroads to return empty space . . . even though other traffic consisting of baggage and express is available for movement." Another suggestion is that consideration be given to the enactment of legislation that would permit the Post Office Department to use motor common carriers for the handling of mail, i.e., legislation, in general terms, which would authorize "use of the cheapest means of transportation consistent with expeditious handling of the mail."

"A change in the law making additional means of transportation available to the department," the report continues, "would allow it to make effective use of a statute providing for negotiation with railroads to obtain rates lower than the maximum rates for carriage of mail prescribed by the Interstate Commerce Commission. Most freight of commercial shippers moves at rates lower than maximum."

The report's concluding section on "Federal Transportation Policies and National Defense" says it cannot be too strongly emphasized that an "adequate" supply of transportation is essential to the prosecution of any war. Considering what "adequacy" as applied to wartime transportation means, the report decides that it "refers to a situation in which the general plan of wartime operations, together with the maintenance of the remaining civilian activities which are essential, is not unduly disrupted or upset as a result of a shortage of transport facilities."

In other words, the report adds, "proper concept of the word 'adequacy' would appear to be one in which transportation does not serve as a brake upon the war effort and, conversely, one in which resources are not wasted in providing transport facilities at the expense of other basic materials and supplies which are needed." Here also is the suggestion that the agency doing all of the federal government's research and promotional work in the transport field could be converted readily into an agency for administration of wartime transport controls.

GENERAL NEWS

"Indirect Approach" To Nationalization

Gass explains danger of giving government more power

A. H. Gass, chairman of the Car Service Division of the Association of American Railroads, warned in an address on December 14 of what he termed the "indirect" approach to nationalization of railroads, which is based upon "suggestions that government would effect improvements that the carriers themselves cannot or will not bring about." Speaking on Transportation in National Emergencies, he told members of the Ohio Valley Shippers Advisory Board, meeting at Cincinnati, Ohio, that this "indirect" approach was used abroad.

Illustrating his views, Mr. Gass referred to criticism that the railroads are "overbuilt"; that there is too much circuitous routing, causing an expensive and wasteful burden upon the economy; that there ought to be an end to cross-hauling; and that there should be more and better planning of transportation facilities. "Expressed or implied in all of these statements," said Mr. Gass, "is the idea that if you will but give the necessary power to the government, all these things would be taken care of and handled as they ought to be handled. Let us concede that such statements have a plausible sound, especially to the uninformed. We who are close to transportation, however, know the fallacies inherent in them, and we ought not to be backward in sharing our knowledge."

What Constitutes "Overbuilding"?

The speaker said that, in the 1930's, there was much talk about "overbuilt railroads" and "over-investment in railroad facilities." "Then the war came, and rail traffic jumped from 290 billion ton-miles in 1938 to 737 billion ton-miles in 1944, nearly threefold. Revenue passenger-miles jumped meanwhile from 21.6 billion to 95.5 billion, more than fourfold. In the light of these figures, who is to say—in advance of the next emergency—what constitutes 'overbuilt' railroads?"

Commenting on circuitous routing, Mr. Gass said that "the result of this multiplicity of traffic arteries is that our rail transportation system would appear to be practically safe from prolonged interruption due to enemy action. Such action might block one or more important channels and produce some temporary and local congestion and delay. However, it would be only a matter of hours—perhaps only minutes—before the dammed-up traffic would begin to flow around the interruption, through the numerous alternative and secondary channels."

Mr. Gass added that the shortest route in miles is not necessarily the most economical or most efficient route, or the route best suited to the shipper's individual requirements. He then posed the question, that if all traffic were to be restricted to the shortest routes, what would become of the alternative routes which give us the flexibility and adaptability and relative invulnerability which are among our sources of strength?

Continuing, the speaker said: "As to government planning of transportation, I would ask only one question. Should transportation facilities be located where the traffic is, or where some government stargazer thinks they ought to be located, perhaps for sociological or some other reasons? Of course, we make some mistakes sometimes in locating trackage, but the remedy for that is to pull up such tracks—when the shippers and the government will let us.

Solution Lies with Businessmen

"In transportation, as in most other matters, the individual in daily touch with the problems of the job knows a great deal more about how the job ought to be handled than some government man at a desk in Washington, dealing by directives with the problems of what he calls 'the field.' I shall continue to believe that the buyers and the operators of transportation can jointly solve transportation problems better than any select group of government planners. The British are now beginning to discover that truth."

The speaker asserted that the solution to one of today's foremost transportation problems—that of low railroad earnings—lies to a great extent in the hands of businessmen. Citing rising costs and the inequities of governmental fiscal policy and transportation regulation, Mr. Gass declared: "The first question is *what* are you going to do to put the transportation situation on a sound, enduring basis. The second question—perhaps of even greater importance—is *when* are you going to start doing it? No one has a greater stake in the safety of our nation, or in the soundness of our economy, than the businessman of America, or has better reason to appreciate how vitally transportation affects these interests. It is high time that he should be setting about to look to his stake in these matters."

"Caroling Commuters"

The country's first televised Caroling Commuters, and what is believed to be the first television program regularly scheduled from a railroad station, will be aired from the South Station, Boston, Mass., for five nights prior to Christmas, by the New York, New Haven & Hartford and the Boston & Albany (New York Central). The commuters' introduction to being video "stars" will be provided from 4:30 to 5 p.m. each evening, December 20-24, inclusive. Station WBZ-TV will move its cameras and technicians into the station concourse each evening and, in addition to group carols, individuals in the station throng will be offered an opportunity each night to do solo broadcasting.

State Commissioners Support Bulwinkle Act

A statement supporting the Reed-Bulwinkle Act has been submitted by Walter R. McDonald, general solicitor of the National Association of Railroad and Utilities Commissioners, to the House Judiciary subcommittee on monopoly power. The subcommittee, headed by Representative Celler, Democrat of New York, is now in recess, but will continue its hearings after Congress reconvenes in January. During November and December the Celler group heard several witnesses on the Reed-Bulwinkle Act (section 5A of the Interstate Commerce Act) and Mr. McDonald's statement, filed on behalf of the N.A.R.U.C. membership, adds to the growing list of supporters of the statute.

Mr. McDonald said that members of state regulatory commissions, most of whom are also members of the N.A.R.U.C., have a "direct interest" in the preservation of the provisions of the act, and are opposed to any legislation designed toward its repeal. The act provides anti-trust immunity to carriers entering into rate-making agreements with I.C.C. approval.

"To repeal Section 5A . . . would be tantamount to new legislation inasmuch as it would represent a radical departure from the traditional policy of the nation . . .," Mr. McDonald declared. The statement said also that "exemption from prosecution is not absolute" under the act, and that the conferences and bureaus permissable under Reed-Bulwinkle perform at least six "useful and necessary" services: Present a practical solu-

tion to the problem of maintaining the complicated rate structures; aid in prevention of unjust discrimination between persons or localities; contribute to the stability and uniformity of the rate structure; provide shippers with a common forum before which requests for rate changes may be presented to all carriers; simplify enforcement of the Interstate Commerce Act; and aid the member carriers in meeting the requirements of the government in time of national emergency.

Open Hearing on Rio Grande Plea to Open Ogden Gateway

The Interstate Commerce Commission, on December 12, began its hearing on the Denver & Rio Grande Western petition seeking to have the commission force the Union Pacific to open the Ogden, (Utah) gateway (see *Railway Age* of August 6, page 62). To accomplish this, the Rio Grande asks that the U.P. be made to participate in joint through rates via the gateway on traffic between so-called Colorado common points or points east thereof, and points in Idaho, Montana, Oregon, Washington and British Columbia. The proceeding is docketed as No. 30297 and is being heard by examiner Frank E. Mullen.

The hearing opened with testimony by Rio Grande witnesses, of whom there are reported to be more than 30. Direct evidence by the complaining road is expected to require a week or more, and will emphasize the Rio Grande's contention that the choice of routes is a matter for the shipper to decide. The road charges that it is contrary to the national transportation policy for the defendants (U.P., together with all parties to tariffs covering movements of the traffic involved) "to restrict the use of such vital through routes to emergency situations."

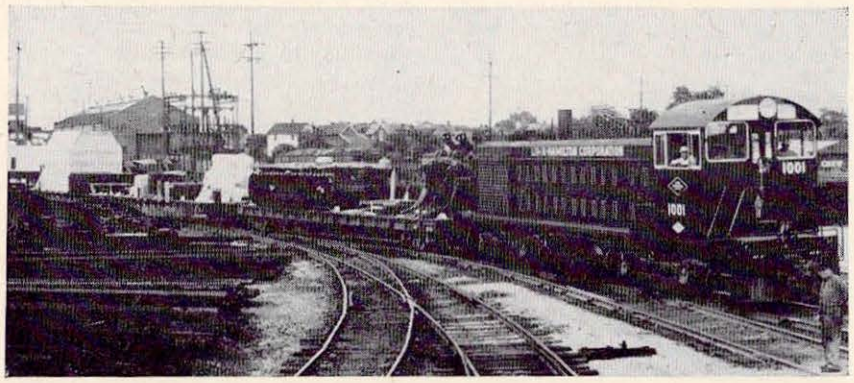
The U.P., on the other hand, maintains that the Rio Grande is attempting to invade a territory built up by the U.P. through large expenditures of money. A. E. Stoddard, U.P. president, has asserted that inclusion of the Rio Grande in the routing would "result in longer, slower and circuitous routing, which entails expensive, unnecessary and wasteful transportation practices."

Permits Boost in Fares for Single-Occupancy of Rooms

Reversing its Division 2, the Interstate Commerce Commission has authorized increases in railroad fares which are applicable where there is single-occupancy of Pullman compartments and drawing rooms in through service via Washington, D. C., to and from New York, New Haven & Hartford points, Boston, Mass., to New York, and Pennsylvania Railroad points, New York and south thereof, on the one hand, and, on the other, points on the Richmond, Fredericksburg & Potomac, Atlantic Coast Line, Seaboard Air Line, and Florida East Coast. The authorized increases will raise the railroad charge where there is single-occupancy of compartments from 1 1/10 to 1½ adult fares, while the rate where there is single-occupancy of drawing rooms will go up from 1½ to 2 adult fares.

The proceeding was I.&S. docket No. 5615, and the commission's report vacated the order under which the tariffs involved had been suspended for the past year. The report also embraced Fourth Section Application No. 23844 which tied into the rate-increase proposal, and the commission granted the relief there sought. It is relief from the aggregate-of-intermediates provision, required because the increases will produce through rates to and from points south of Hamlet, N. C., higher than combination rates to and from that point to which the Seaboard blankets back the competitive fares it maintains to and from Atlanta, Ga.

Commissioner Splawn filed a dissenting opinion in which Commissioners Aitchison and Johnson joined. Messrs. Splawn and Aitchson comprised the Division 2 majority which made the prior report to which the division's third member, Commissioner Alldredge, dissented (see *Railway Age* of July 23, page 49). Commissioner Miller, "being necessarily absent," did not participate in the disposition of the case.



WHAT IT TAKES TO MOVE A SHOVEL.—A Lima-Hamilton Diesel switcher pulls cars loaded with components of a Lima-Hamilton Type 2400 shovel for delivery to a West Virginia contractor. The shovel has a capacity of 6 cu. yd., and will be used for stripping coal. It is powered by a Hamilton 6-cyl., 8¾ by 12 Diesel, developing 400 net hp. The locomotive Diesel is a Hamilton 8-cyl., 9 by 12 engine, pressure-charged, with 1,200 net hp. Both Diesel engines are built at Lima-Hamilton's Hamilton, Ohio, plant, and the shovel and locomotive at its Lima, Ohio, plant

G. N. to Cut Fares 32 Per Cent Between Seattle and Vancouver

The Great Northern plans, on January 15, to reduce by 32 per cent its one-way and round-trip coach fares between Seattle, Wash., and Vancouver, B. C. N. D. Keller, general passenger agent at Seattle said the new fares will be the lowest of any common carrier between the two points and will apply at all stations on the Seattle-Vancouver line.

Present one-way and round-trip railroad coach fares between the two cities, excluding federal tax, are $4.26 and $7.70, respectively. The fares are $3.30 and $5.95 by bus and $7.95 and $15.20 by air. The new G. N. fares will be $2.90 one-way and $5.25 round trip.

Mr. Keller said that, in preparing for the inauguration of streamliner service on the Seattle-Vancouver line next Spring, the railroad recently conducted a survey of the patronage potential in that territory. The substantial preference was for rail travel, largely because of the safety and comfort factors, he added. "The G. N. now proposes to combine those incentives with the lowest one-way and round-trip coach fares of any common carrier serving the Seattle-Vancouver route, and to make them effective in advance of streamliner service."

Wyer Appointed to Head P.S.C. Investigation of Long Island

An investigation by the New York State Public Service Commission of the Long Island's commutation rates, basic fares, service, freight revenues and its relationship with the Pennsylvania was announced this week by Benjamin F. Feinberg, chairman of the commission. William Wyer, senior member of William Wyer & Co., consulting engineers, and former operating head of the Central of New Jersey, has been appointed to conduct the investigation.

Robertson Blasts Labor Act In Newspaper Interview

Declaring that the Railway Labor Act originally contemplated settlement of disputes by boards "with a sympathy and understanding for labor," David B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, is reported to have told a staff writer for the Scripps-Howard newspapers that the act "has broken down, largely as a result of the appointment to adjustment boards of lawyers, economists and professors who have received more and

more cases that could be settled on a local level."

While admitting that "railroad labor has made gains in recent years," Mr. Robertson was quoted as having said that these had been won "at unnecessary cost to the unions." "Emergency boards," he added, "have returned such unsatisfactory recommendations in recent years" that his brotherhood "has been forced to reject nearly all and fight for added improvements." He was also reported, however, to have said that "the unions have been forced to accept inadequate rewards with which they completely disagree" because of "threats of federal seizure of railroads."

Barriger on College Staff

John W. Barriger, president of the Chicago, Indianapolis & Louisville, has been appointed a faculty associate of Indiana University's department of transportation. He is one of seven Midwestern business leaders appointed to act as consultants in the development of study and research programs in accordance with changing business conditions and demands. The Monon president will also visit the campus for consultation with students specializing in the study of transportation to assist them on projects and in planning careers.

Truckers Consider "Retaliatory Campaign"

Fifty-three executives of major truck lines, all members of the American Trucking Associations' public relations committee, met recently in Chicago to plan "immediate and substantial expansion of the work of telling the story of the trucking industry to the general public and to such special publics as are concerned." Definite provision of support for this expansion was agreed upon early in the meeting, and plans made for further meetings, the A.T.A. announced.

Among proposals considered to combat what was described as an "anti-truck drive" were the advisability of a "retaliatory campaign against the railroads," the interest of the shipper in this attack not only as a buyer of for-hire truck transport but as an operator of large numbers of motor trucks hauling his own goods; copy base for industry advertising; utilization of truck sides for promotional purposes; and co-operation with employees in disseminating the "truth" about truck transportation.

Johnson I.C.C. Chairman For 1950; Succeeds Mahaffie

Interstate Commerce Commissioner J. Monroe Johnson has been chosen by the commission as its chairman for the year 1950. He will succeed Commissioner Charles D. Mahaffie, who will continue as a member of the commission.

Commissioner Johnson has been a member of the I.C.C. since June, 1940; and for five years prior to that time served as Assistant Secretary of Commerce. He was in line for the chairmanship in prior years, but due to his appointment as Director of the Office of Defense Transportation in 1944 was not available to serve. He continued as a member of the commission while with O.D.T., but participated in decisions only where there was an equal division of the commission's membership.

Air Lines Object to Railroad Criticism

Robert Ramspeck, executive vice-president of the Air Transport Association of America, struck back at railroad criticism of air line competition in a talk before the Chicago Rotary Club on December 13. "The railroads have no reason for complaint against the air lines," Mr. Ramspeck said. "If they are in difficulty it is not the result of air line competition. In 1948 air lines performed only 1.6 per cent of the total passenger transportation, and only one-half of one per cent of the total freight transportation of the nation."

The speaker said that most of the criticism of air line subsidy is "eye wash . . . . We could toss figures back at figures for months. . . . We will put our record of public aid up against that received by any other form of transportation providing all will tell all, that any form of public aid is still public aid."

He then outlined details of the comprehensive industry-government-military program for improving safety, dependability and regularity of scheduled air line performance, and predicted that the scheduled domestic air lines would fly approximately 6,500,000,000 passenger-miles this year and carry 41 per cent of the total first-class travel market. He also pointed out that recent rail passenger fare increases bring air fares below rail fares in many instances.

Unschooled Crew Ran By Meet Point, Causing Collision

Reporting on a September 3 collision between freight trains of the Chicago, Rock Island & Pacific and the Chicago, Burlington & Quincy, the Interstate Commerce Commission has reviewed evidence indicating that members of the Rock Island crew were unfamiliar with the Burlington line over which they were running. The evidence was to the effect that no member of the Rock Island crew had been examined regarding applicable Burlington operating rules, or made acquainted with the physical characteristics of the line; and that the Rock Island conductor had been "instructed to proceed" when he "protested" against making the trip, his initial run over the line, without a pilot. The report also said that the Rock Island engineer and fireman had made

SIXTY YEARS AN I. C. COMMUTER—AND STILL AT IT.—The Illinois Central, represented by its president, Wayne A. Johnston (right), took ocassion on December 1 to honor a "perennial" commuter whose journeys between his home and work during the past 60 years are equivalent in distance to 13 times around the world. He is L. Scott Tiffany, 82, who is shown being presented the No. 1 certificate of membership in the railroad's newly formed Half-Century Commuters Club. Also on hand for the ceremonies was old "tea-kettle" engine No. 201, which powered commuter trains when Mr. Tiffany first began using I. C. service in 1889. He recalls the days when I. C. trains reached Randolph Street station on a trestle in the bed of Lake Michigan and that "on windy days we would close the windows to keep out the lake spray." Mr. Tiffany continues active as board chairman of a rug and furniture firm located in Chicago's "Loop"

THE RAILROADER'S PURSUIT OF HAPPINESS

"The Declaration of Independence specifies three God-given rights—life, liberty and the pursuit of happiness. The Declaration of Independence does not identify happiness as one of the rights. It clearly referred to the *pursuit* of happiness as the right of all men. That is your guarantee and my guarantee. We have not been promised happiness. We have been given the right to work for it, the right to pursue it and grasp it and the right to fight for it, if fighting be necessary.

"But we now find many who believe that happiness is something their federal government should give to them in one form or another. There are those . . . who expect their undertakings to succeed, not because they are able to develop the happiness of success by legitimate pursuit, but because they look to government for subsidies to absorb costs they are unable to meet. . . .

"Your railways have asked for no governmental assistance and ask for none now. They received no part of the near billion dollars in federal aid given to transportation in 1948 and probably more than that in 1949. They have asked only for the fair treatment to which they are entitled and which they have so deservedly earned throughout the years and particularly during the late war. And in their request for such fair treatment they have included the relaxation of unnecessary regulation, a halt to the imposition of added and equally unnecessary regulation and the combining of governmentally assumed responsibilies for costs with those controlling revenues. They have repeatedly cautioned against the imposition of costs and taxes without regard to their ability to pay, costs which would ultimately price them out of the transportation market. They have asked that railway management be permitted to manage. But in these pleadings for fair treatment, the railways find themselves very near to being alone. The interests of business and industry as a whole have failed to support the very agency that has made their success possible. Blindly and selfishly they follow the lure of today without opening their eyes to the dangers of the morrow. They refuse to concede that their future welfare is tied to that of the railways now, just as it has been in the past. . . .

"What of the future? Can the railways continue to develop? Can they continue to give our country the highly efficient service that they have provided through more than a century of effort? They have been outstanding leaders in the pursuit of happiness. The railway industry has carried with it all other basic industries in their successful realization of the opportunities afforded by our freedom. Is it soon to be deprived of the rights of private enterprise? Shall the railway industry be denied the right to attract new capital because its costs of operation and maintenance are increased to the point where it cannot longer earn even the semblance of a fair return upon its investment? Is it to be denied the right to pursue happiness by being subjected to taxation for the support of its competitors, the highways, the waterways and the airways? When it can no longer lead in the growth and development of our country it will be for the reason that the Constitutional guarantees of individualism, of opportunity and of freedom have been displaced by a shackled regimentation under a socialistic order. The American people do not want a socialized railway industry, but thus far have failed to recognize the devious and sinister activities designed to force such a condition.

"We need but to look at Britain's experience to understand what state control of railways may mean. In 1948, British railways had 18 employees for every mile of main track, compared with six in the United States. There freight train-miles per train-hour averaged less than eight as against 16 on American railways. Britain's average train load was 162 tons, while ours was 1,176 tons. These are but a few comparisons that might be made. They all spell higher costs, which the people as a whole must pay. And Britain's railways paid no taxes in 1948 while American railways paid considerably over $1 billion toward the cost of American government. On top of the loss of all railroad taxes, British austerity required its public to pay a 1948 railway deficit from operations of nearly $19 million.

"The American public must be told in understandable terms what the nationalization of our railways may mean and they can rest assured that, just as our railways lead in pioneering and in preparing the way for other industry, just so would they lead on the downward path of socialism. They would be followed quickly by the entire transportation industry, by steel, coal, power, banks, by the automotive industry, the textile industry, the petroleum industry and many others. The American people do not want the evils of socialism, but they are doing too little to successfully combat its threat. . . .

"As individuals, what can you do? You can talk, not occasionally, but frequently, not mildly or apologetically but forcefully. You can talk to the members of your family, your fellow railroaders, your friends and neighbors. . . . Talk in the interest of our industry, tell the businessmen, the shippers and the manufacturers along your lines the full truth and outline the consequences to them if that truth is not heeded. In the final analysis, it is within the power of business and industry to choose between private enterprise and a socialistic state. Ask them to give voice to their choice and not mumble. All this must be done at the same time that you carefully consider your operations and practices and correct or remove any weaknesses or shortcomings that may be present. Then act as you talk and encourage others to act likewise. Do not be discouraged should you be labeled a prophet of ruin. . . . Those who might so accuse you are those who would have you fail in your duty to our industry. They are the fellow-travelers of socialism.

"You have been very busy looking after the many responsibilities attached to your respective jobs and may have overlooked your even greater responsibility, the responsibility of preserving the Constitution and our American way of life. If you have, do not neglect it longer. Be you a Democrat or a Republican, be first an American who will fight for Americanism and will fight against socialism in all its forms and particularly in the form of centralization of control and power, who will fight for his republic and keep it. The American railroader has every reason to jealously guard his three rights, and not the least of these is the 'pursuit of happiness.' May he also guard those rights aggressively."

—From an address to the New England Railroad Club on December 13 by F. S. Schwinn, assistant chief engineer, Missouri Pacific Lines; president, American Railway Engineering Association, and chairman, Engineering division, A.A.R.

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only one previous trip over the line, the engineer having "protested" in vain against making that trip without a pilot.

The Rock Island train ran by the point where it was supposed to have met the Burlington train, so the formal finding of the commission's report, which was by Commissioner Patterson, was that the accident, a head-end collision, was caused by "failure to obey a meet order." The accident resulted in the death of the Burlington train's engineer and the injury of three other members of its crew. The commission followed up its finding as to the cause with a recommendation that the Burlington install an "adequate" block system on the line involved.

The line is a single-track section of the Galesburg division, from Colona, Ill., to Orion, 10.3 mi., over which trains are operated by timetable and train orders, and by a manual-block system for following movements only. The commission had the latter in mind in recommending that an "adequate" block system be installed. "The book of operating rules of the C.B.&Q." it said, "contains manual-block rules for the blocking of opposing trains as well as following trains, but the provision for blocking opposing trains was not in effect in the territory in question. If this provision had been in effect in this territory these opposing trains would not have been permitted to occupy the same block simultaneously."

The collision occurred 2.29 mi. south

of Briar Bluff, Ill., the point at which the Rock Island train was supposed to have waited to meet the Burlington train. Briar Bluff is 1.6 mi. south of Colona, the northern point on the Burlington line over which Rock Island trains are operated by their own crews. The southbound Rock Island train was Extra R.I.2593 South—locomotive, 31 cars and caboose; the northbound Burlington train was Extra 4971 North—locomotive, 25 cars and caboose. Members of both crews received and understood a Burlington train order which established Briar Bluff as the meeting point, and provided that the Burlington train would take a siding there while the Rock Island train remained on the main track north of the fouling point at the south siding-switch.

The order was delivered to the R. I. crew when its train entered upon the Burlington line at Colona. The engineer told the commission investigators that he read the order and handed it to the front brakeman, who, the report continued, "was consulting the timetable to determine the location of Briar Bluff when the engineer observed the opposing train." The engineer placed the brake valve in emergency position and the train had "almost stopped" when the collision occurred.

Additional Testimony

Meanwhile, the conductor said that when he read the train order, both he and the flagman "consulted the timetable to determine the location of Briar Bluff." His further testimony on this point was summarized by the commission as follows: "When it was discovered that Briar Bluff was the first station south of Colona, the flagman informed the conductor that they had just passed a siding. The conductor then took action to open the conductor's valve. . .but the brakes were applied in emergency before he reached the valve."

The Rock Island fireman had not read the train order, although one of the applicable rules, as quoted by the commission, stipulated that "enginemen must show train orders to firemen," while showing them to "forward trainmen" is required only "when practicable." The main station sign at Briar Bluff is on the fireman's side, but there is an advance station sign on the engineer's side, 1.11 mi. north of the station. The engineer said he did not see either of these signs; he saw the siding, but did not recognize it as the meeting point, because he "thought that Briar Bluff was the second station south of Colona instead of the first."

The surviving members of the Burlington engine crew said they saw the Rock Island train about 650 ft. ahead of them, and warned their engineer who applied the brakes in emergency. They estimated that the speed of their train had been reduced to about 20 m.p.h. when the collision occurred. Both locomotives were derailed along with the second to sixth cars, inclusive, of the R. I. train, and the first five cars of the Burlington train. The front end of the Burlington locomotive was described in the report as having been "crushed and forced upward," while its cab "was crushed and the cistern torn loose from the tender frame." The weather was "clear" at the time of the accident—11:44 a.m.

Pooled Crews

The commission's investigation disclosed that prior to August 16, a Rock Island crew was regularly assigned to the movement involved. On that date, crew assignments were changed to pool service, and thereafter the R. I. crew with the greatest amount of time off duty at the originating terminal was assigned to the run.

Employees thus assigned were "required" by the C.B.&Q. to pass an examination on its operating rules, and to be "fully acquainted" with the physical characteristics of the line, the commission said. It added that a pilot is required if the R. I. employees are not so qualified. And it explained further that arrangements had been made whereby examinations of R. I. employees were to have been conducted by a representative of that road who had previously been examined by the Burlington.

"The engineer of Extra R.I.2593 South," the report continued, "reported for examination on August 29, 1949, when he was about to start his first trip over this line. He said that he was not examined but was issued a certificate bearing the endorsement of the official assigned to examine him and indicating that he had been examined. Before beginning his first trip over the C.B.&Q. line, the conductor reported to the designated C.R.I.&P. official for examination at 9:45 a.m. on the day of the accident. He said that the C.R.I.&P. officer discussed [one rule], informed him that the other rules either were identical or similar to the C.R.I.&P. rules, and issued a certificate that the conductor was qualified to operate trains between Colona and Orion Junction.

"The fireman reported for examination but was informed that it was not necessary that firemen be examined. The front brakeman and the flagman said that they had not been examined. The engineer and the fireman had made only one trip over the C.B.&Q. between Colona and Orion Junction. This trip was made five days prior to the day of the accident."

Then came the references to the protests made by the engineer and conductor against making their initial trips without a pilot, the report proceeding to note that neither the front brakeman nor flagman had made a trip over the line prior to the day of the accident; and that copies of the current Burlington timetable "were provided only for the engineer and for the conductor." It added that "if a pilot had been assigned to this train, the accident probably would not have occurred.

Freight Car Loadings

Loadings of revenue freight in the week ended December 10 totaled 668,825 cars, the Association of American Railroads announced on December 15. This was a decrease of 25,098 cars, or 3.6 per cent, below the previous week, a drop of 114,088 cars, or 14.6 per cent, under the corresponding week last year and a decline of 185,334 cars, or 21.7 per cent, below the equivalent 1947 week. Coal loadings last week numbered 136,017 cars, 3,426 cars less than in the previous week and 29,214 cars below the comparable 1948 week.

Loadings of revenue freight for the week ended December 3 totaled 693,923 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, December 3

District	1949	1948	1947
Eastern	121,523	148,493	159,785
Allegheny	133,083	165,118	180,600
Pocahontas	47,412	63,584	73,388
Southern	121,379	129,512	144,695
Northwestern	83,789	100,155	102,681
Central Western	121,642	128,503	143,677
Southwestern	65,095	68,807	73,762
Total Western Districts	270,526	297,465	320,120
Total All Roads	693,923	804,172	878,588
Commodities:			
Grain and grain products	49,262	54,044	49,439
Livestock	11,991	14,174	16,340
Coal	139,443	163,060	197,751
Coke	12,096	14,962	14,820
Forest products	41,010	40,524	49,833
Ore	19,508	31,263	22,478
Merchandise l.c.l.	83,827	102,034	117,754
Miscellaneous	336,786	384,111	410,173
December 3	693,923	804,172	878,588
November 26	664,555	722,936	792,331
November 19	758,972	858,089	902,662
November 12	635,823	871,679	878,283
November 5	578,981	843,586	910,170
Cumulative total 48 weeks	33,482,256	39,988,954	41,529,117

In Canada.—Carloadings for the week ended December 3 totaled 77,719 cars, compared with 78,972 cars for the previous week, and 81,321 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
December 3, 1949	77,719	30,087
December 4, 1948	81,321	34,595
Cumulative totals for Canada:		
December 3, 1949	3,644,996	1,481,847
December 4, 1948	3,776,926	1,664,803

U. S. Chamber Plans Transport Conference

A two-day National Transportation Conference, sponsored by the United States Chamber of Commerce and bringing together representatives of carriers, shippers, investors, and the public, will be held in Washington, D. C., on February 1-2.

Approximately 100 persons are expected to participate in the conference which will be devoted to round-table discussions on major issues confronting

the transportation industry. Plans for the two-day session are being made by the chamber's Transportation and Communication Department.

With various transportation authorities serving as moderators, the discussions will cover government transportation administration, the effect of government aids on allocation of traffic, and the relation of government aids to national security.

Establish Award for Defense Transport Ideas

A national transportation award to be presented annually for the year's most outstanding contribution to defense transportation has been established by the National Defense Transportation Association "to encourage programs of transportation research and development, particularly among private, industrial, educational and research organizations in cooperation with the research agencies of the Department of Defense." Any individual, firm, society, association or similar organization is eligible. The winner will be selected by a board of impartial judges including flag and general officers from all branches of the Defense department. Judging will be on the basis of transportation value and defense or military application. Deadline for entries, properly documented, will be April 1, 1950, with the 1949 award scheduled to be presented next fall.

Conductors and Trainmen End 40-Hr. Week Negotiations

Representatives of the Brotherhood of Railroad Trainmen and the Order of Railway Conductors broke off negotiations with the Carriers' Conference Committees at Chicago on December 14 without reaching agreement on their demand for a 40-hr. week for yard service employees, and a number of rules changes. The organizations began circulation of a strike ballot on December 15, with a reported date of January 24, 1950, for return of the ballot. The organizations served the demands on the individual roads on March 15. Negotiations with the carriers had been in progress since September 22 (see *Railway Age* of October 1, page 55).

Grout, Soo Line Head, to Retire; MacNamara, C.P., Is Successor

H. P. Grout, president of the Minneapolis, St. Paul & Sault Ste. Marie since 1944, will retire on December 31 and will be succeeded by G. Allan MacNamara, vice-president—traffic, of the Canadian Pacific. Mr. Grout will continue as a director and member of the executive committee. Prior to January 1, 1948, Mr. MacNamara was general traffic manager of the Soo Line.

Additional General News appears on pages 88 and 89.

OVERSEAS

British Railways Form Special "Training Council"

To promote cooperation with unions in development of training and educational arrangements for railway employees, there has been organized in Great Britain, at the invitation of the Railway Executive, a British Railways Joint Training and Education Advisory Council, composed of representatives of the Railway Executive and of unions representing the various classes of employees.

The council will consider special training schemes for higher administrative posts, vocational training, promotional training, engineering and trade apprentices' training, training for supervisors, use of residential schools, and other matters relating to training and education of railway staff, and will make recommendations to the Railway Executive, to the end that "the fullest opportunity should be given to all sections of the staff and there will be the widest measure of co-operation with educational authorities."

Austria.—This country has released 350 million schillings ($2.4 million) in Marshall Plan counterpart funds to be used in part to finance the nation's railroad reconstruction. Approximately 150 million schillings are earmarked for the railroads, and will be used to purchase 200 freight cars, reconstruct 500 war-damaged freight cars, and construct 80 miles of new roadway. Counterpart funds represent the income of participating Marshall Plan countries from the sale of E.C.A. goods within each country. The governments deposit the money in special accounts for industrial, agricultural or other recovery projects and release the funds periodically with E.C.A. agreement.

Belgium.—Marshall Plan loans totaling $5,700,000 will help to bring about what has been termed "one of the most important works which Belgium has undertaken during the twentieth century" — the linking of its northern and southern railway networks in the heart of Brussels.

Interrupted by two world wars, the construction of an underground connection is now reported to be headed for completion by 1952, with partial service to begin in 1950 or 1951. The new link, according to the Economic Cooperation Administration, will permit freight cars loaded at Antwerp on the north to pass through the city with a minimum of delay, and will also speed up movement to northern seaports of cars loaded with export products of the country's heavily industrialized south. Belgium is also using Marshall Plan funds, the E. C. A. says, for elimination of important railroad-highway grade crossings.

ORGANIZATIONS

The **Chicago Passenger Club**, at its annual election dinner on December 7, elected Glenn W. Hyett, city passenger agent of the Chicago, Milwaukee, St. Paul & Pacific, as its president for the coming year. Other officers elected are: First vice-president, E. S. Lambert, assistant city ticket agent, Chicago, Rock Island & Pacific; second vice-president, G. S. Pitts, ticket seller, New York Central, and secretary-treasurer, J. H. Otten, chief clerk, Northern Pacific.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

Burlington to Spend $11 Million Building Cars in Own Shops

H. C. Murphy, president of the Burlington Lines, has announced that the road during 1950 will build $11 million worth of cars in its shops. The equipment will include 1,400 steel-sheathed box cars, 800 all-steel hopper cars and 30 baggage-express cars.

The **Merchants Despatch Transportation Corporation** has ordered 500 40-ft. refrigerator cars from its own shops.

The **Wabash** has ordered 400 50-ton hopper cars from its own shops.

LOCOMOTIVES

The **Atlantic Coast Line** has ordered 73 Diesel-electric locomotive units from the Electro-Motive Division of General Motors Corporation at a cost of more than $10,000,000. The order consists of 5 2,250-hp. passenger units, 36 1,500-hp. freight units, 9 1,200-hp. switching units and 23 1,500-hp. road-switching units. Delivery is scheduled to begin in January and to be completed in May. When the new motive power is received a large number of old steam locomotives will be sold or scrapped.

The **Lehigh Valley** has ordered nine Diesel-electric locomotive units. Five 1,000-hp. switching units will be built by the Baldwin Locomotive Works, one 1,200-hp. switching unit by the Electro-Motive Division of General Motors Corporation and three 1,500-hp. road-switching units by the American Locomotive Company.

The **St. Louis-San Francisco** has ordered 14 2,250-hp. Diesel-electric passenger locomotive units from the Elec-

tro-Motive Division of General Motors Corporation for delivery during the first half of 1950.

The **Western Maryland** has ordered 20 Diesel-electric locomotive units for delivery next February and March. The Electro-Motive Division of General Motors Corporation will build 12 1,500-hp. freight and 4 1,500-hp. road-switching units and the American Locomotive Company 4 1,500-hp. road-switching units.

SIGNALING

The Norfolk & Western has placed an order with the Union Switch & Signal Co. for necessary material to install 6.5 mi. of centralized traffic control between Petersburg, Va., and Jack, and replace the present mechanical interlocking at Jack with an electro-pneumatic interlocking. Control of the new installation will be in the dispatcher's office at Crewe. At the same time, the control of previously installed C.T.C. between Jack and Poe, and City Point Junction and Poe, and an interlocking at Poe, will be moved to Crewe. The construction work will be done by railroad forces.

SUPPLY TRADE

American Steel Foundries Net Income Was $6,505,442

Net income of American Steel Foundries and subsidiaries for the fiscal year ended September 30, 1949, was $6,505,442, compared with $6,008,851 for the preceding fiscal year, according to the recently released annual report. Sales during the fiscal year just ended totaled $74,619,329, compared with $76,982,944. The major portion were equipment parts furnished directly to railroads or to builders of freight and passenger cars and locomotives. Unfilled orders on September 30, 1949, totaled $10,000,000, compared with $36,000,000 a year earlier, reflecting, the report said, the "almost complete curtailment in purchase of new freight car equipment."

A.C.F. Backlog $61,000,000 On October 31—Hardy

The backlog of the American Car & Foundry Co. and subsidiaries on October 31 was $61,000,000, Charles J. Hardy, chairman, said in the recently published semiannual report to stockholders. Net earnings for the six months ended October 31 totaled $2,267,826. Mr. Hardy's report said there are evidences of a resumption of railroad equipment buying.

Herbert W. Chamberlain, vice-president of the **General Railway Signal Company,** at Rochester, N. Y., has been appointed executive vice-president, with the same headquarters, effective January 1, 1950. **Arthur E. Heimbach,** western manager at Chicago, has been appointed vice-president at Rochester, and will be in charge of sales in the western United States and Canada. Appointed vice-president in charge of sales in the eastern United States and Canada is **Percy W. Smith,** eastern manager, with headquarters at New York. **Oscar S. Field,** director of engineering and research, with headquarters at Rochester, has been advanced to vice-president of engineering. **Carl D. A. Henze,** resident manager of the Chicago office, has been appointed western manager, with the same headquarters, and is succeeded by **Eugene F. Auth,** sales engineer of the Chicago office. **Sydney W. Freeman,** sales engineer of the New York office, has been appointed resident manager of the same office.

Mr. Chamberlin was born on January 25, 1890, in Rochester, and educated in the Rochester public schools and the Rochester Institute of Technology. He started his business career by entering the employ of the General Railway Signal Company upon its organization in 1904, and served in factory, production and financial departments until 1913, when he was appointed auditor and assistant treasurer of the General Railway Signal Company of Canada at Montreal, Que. In 1918 Mr. Chamberlain became vice-president of the latter company, and succeeded to its presidency two years later. From 1922 to 1924, he served as president of the Cyclemotor Corporation, and for the next three years as vice-president of the Cyclemotor Corporation, and for the next three years as vice-president of the G. R. S. Products Corporation at Albany, N. Y. Mr. Chamberlain was appointed assistant treasurer of the General Railway Signal Company in 1927, and elected secretary in 1933. He became assistant to the president in 1937, and in January, 1945, was appointed sales vice-president, which position he held until his recent appointment.

Herbert W. Chamberlain

Born on December 23, 1902, in Allentown, Pa., Mr. Heimbach graduated in electrical engineering from Pennsylvania State College in 1924. Susequently, he completed the two-year apprenticeship course of the Union Switch & Signal Co., and then served as engineer for that company until 1927, when he became train control supervisor of the Pittsburgh & Lake Erie. In 1931 he was appointed assistant signal engineer, becoming assistant signal and telegraph engineer in 1933. He was promoted to principal assistant engineer in 1937, and in 1941 became associated with the General Railway Signal Company in Chicago as sales engineer. He was appointed resident manager of the Chicago office in 1945, and western manager in 1948.

Arthur E. Heimbach

A native of Springville, N. Y., where he was born on February 2, 1900, Mr. Smith attended grade and high schools at Salamanca, N. Y., and later studied at the Rochester Institute of Technology. During school vacations he worked as labor foreman for the Westinghouse-Church-Kerr Company, and also for the Buffalo, Rochester & Pittsburgh (now Baltimore & Ohio) as a part-time employee, dividing his time between school and the railroad. In 1921 he began his full-time railroad experience as draftsman with the American Locomotive Company, joining the B. R. & P. as draftsman in the mechanical engineer's office in 1922. In 1923 he resigned from

Percy W. Smith

that position to become a draftsman, and later an engineer, in the engineering department of the General Railway Signal Company. Mr. Smith was appointed sales engineer of the New York office in 1937, and advanced to resident manager in 1945, becoming eastern manager in 1948.

Mr. Field was born on March 9, 1892, in London, England. He received his early academic education in London at the St. Clement Danes Holborn Estate School, graduating in 1907. In 1912 he graduated from Regents Polytechnic of London in civil engineering, and in the same year came to the United States and entered the employ of the Brown Construction Company, Philadelphia, Pa., as assistant designer. He later served in the same position with the Baldwin Locomotive Company in Philadelphia, and in 1914 became associated with the Hall Signal Company of Gar-

Oscar S. Field

wood, N. J., as assistant to consulting engineer. He was promoted to patent attorney in 1916, and to chief engineer in 1919. Mr. Field graduated from the New Jersey Law School in 1922 and was admitted to the New Jersey bar and Supreme Court in 1923. In 1925 he moved to Albany, N. Y., where he became chief engineer of the G. R. S. Products Company. Appointed senior designing engineer of the General Railway Signal Company at Rochester in 1928, Mr. Field was advanced to director of engineering and research in January, 1945.

The newly appointed western manager, Mr. Henze, was born on February 25, 1886, in Albany, where he attended the public schools. After graduation he studied mechanical engineering with the Illinois Correspondence School, starting his business career in 1901 as a draftsman with the Standard Signal Company at Green Island, N. Y. In 1903 he became a draftsman and estimator with the Pneumatic Signal Company at Rochester, and the following year, when the Taylor and Pneumatic Signal Companies formed the General Railway Signal Company, he was engaged in estimating, commercial engineering, and construction work. Mr. Henze joined the Federal Signal Company as office engineer and construction foreman at Chicago in 1906, being transferred to Albany in 1909 as superintendent of construction. In 1911 he became resident manager at Chicago

Carl D. A. Henze

and, with the merger of the Federal Signal Company with the General Railway Signal Company in 1924, was appointed assistant resident manager at Chicago. He was advanced to resident manager in 1948.

Mr. Auth was born on November 4, 1907, at Clarksdale, Ill. After finishing high school, he took an electrical engineering course at Milliken University, Decatur, Ill. He entered railroad service in 1923 with the Wabash as a laborer at Decatur, and subsequently served as a signal helper until 1927, at which time he joined the Pennsylvania as a signalman on the St. Louis division. Mr. Auth also worked for the Chicago, Burlington & Quincy as a signalman, re-

Eugene F. Auth

turning to the P.R.R. in 1930 in the same position. From 1934 to 1936 he served as special apprentice and was later appointed assistant foreman telegraph and signals, New York division, becoming foreman, electric traction, of that division in 1938. The next year he was made inspector, telegraph and signals, New York division, and later that year was appointed supervisor, telegraph and signals, of the Long Island, at Jamaica, N. Y. Following service as supervisor, telegraph and signals, Logansport division, of the Pennsylvania from 1940 to 1944, Mr. Auth became assistant trainmaster on the Grand Rapids division, and in December, 1944, went with the Railroad Accessories Corporation, at New York. In October, 1945, he was assigned to their western territory out of Chicago. He left the R.A.C. in 1947 to join the sales force of the Chicago office of General Railway Signal.

Mr. Freeman was born on May 27, 1907, in New York, and was graduated from the Rochester Institute of Technology in 1928, and from New York University in 1935 with a B. S. degree in electrical engineering. His career with General Railway Signal began in 1925 as a co-operative electrical student at Rochester, where he worked in various departments in the factory and offices. From 1928 to 1932, he was engaged in signaling installation work for the company, and subsequently took a job as signal maintenance foreman on the New

Sydney W. Freeman

York City subway system. In 1935 he went to Rio de Janeiro, Brazil, to work on railway signaling installation for General Railway Signal Company, returning to the company's home office in the United States in 1939. After spending a year on car retarder installation work, Mr. Freeman was made sales engineer of the New York office. During World War II he was engaged in testing and servicing remotely controlled machine gun turret systems installed on the B-29 "Superfortresses." He returned to sales work in 1944, in which capacity he remained until his appointment as resident manager.

The **Kellogg Switchboard & Supply Co.**, Chicago, has appointed as assistant sales manager **T. DeWitt Talmage,** who was associated for 16 years with the Tennessee Valley Authority in various communications posts.

Neele E. Stearns, acting vice-president of the **Inland Steel Products Company** (subsidiary of **Inland Steel Company**), has been elected executive vice-president of

the subsidiary, with headquarters at Milwaukee, Wis. Mr. Stearns was formerly assistant general sales manager of the parent company.

J. Robert Bunch has been appointed sales representative to assist **J. D. Alexander** in the Cleveland (Ohio) sales office of the **American Wheelabrator & Equipment Corp.**, Mishawaka, Ind. For the past four years, Mr. Bunch has supervised the erection and servicing of Wheelabrator blast cleaning equipment and Dustube collectors in the Cleveland area.

The **Cherry Rivet Company**, Los Angeles, Cal., has established a new branch sales office and warehouse at 69 Harney road, Scarsdale, N. Y.

Robert C. Hood, formerly vice-president of the **Ansul Chemical Company**, Marinette, Wis., has been elected president, succeeding his late brother, **F. James Hood**, whose death was reported in the *Railway Age* of December 3. **Leonard C. McKesson**, formerly sales director, has been advanced to vice-president in charge of sales, and **Arthur C. Pope**, formerly production manager of the company's sulfur dioxide and methyl chloride plants, has been promoted to vice-president in charge of manufacturing.

S. W. Rolph, executive vice-president of the **Electric Storage Battery Company**, Philadelphia, Pa., has been elected

S. W. Rolph

president, effective January 1, 1950, to succeed **R. C. Norberg**, who has been elected chairman of the board of directors.

John S. Vreeland, sales representative for the railway publications of the **Simmons-Boardman Publishing Corporation**, has been appointed business manager of one of those publications, *Railway Signaling and Communications*.

Mr. Vreeland was born at Cincinnati, Iowa, on November 16, 1907, and was graduated in engineering from Iowa State College, Ames, Iowa, in 1928. He worked two summers before graduation in the engineering department of the Chicago, Rock Island & Pacific and after graduation joined that road as a rodman. He later was promoted to instrumentman and served in the engineering department at various points in Iowa, Minnesota and Missouri. He also worked on new line location and construction in Missouri and as an inspector, checking joint facility accounts. In June, 1931, he was appointed supervisor of track and worked in that capacity at various points in Arkansas, Oklahoma, Iowa and Missouri. Mr. Vreeland joined the Simmons-Boardman Publishing Corporation as associate editor of *Railway Age* and of *Railway Engineering and Maintenance* at Chicago, in April, 1938, and was advanced to eastern engineering editor of *Railway Age* and eastern editor of *Railway Engineering and Maintenance* in September, 1944. He was appointed sales representative for the company's railway publications in June, 1946.

John S. Vreeland

OBITUARY

Maurice Costello, sales engineer for the Flannery Bolt Company, Bridgeville, Pa., died on November 29. He had been associated with Flannery Bolt continuously since 1913.

Harrison Hoblitzelle, chairman of the board of directors of the General Steel Castings Corporation, died on December 5, at his home in Ithan, Pa. Mr. Hoblitzelle was born in St. Louis, Mo., on October 17, 1896. He was graduated from Cornell University in 1917 and in November of that year joined the Commonwealth Steel Company, Granite City, Ill., working successively as assistant purchasing agent, assistant treasurer, manager of purchases and supplies, and as vice-president and manager of sales. When General Steel Castings purchased Commonwealth Steel in 1929, Mr. Hoblitzelle was elected a director of the corporation and vice-president and general manager of the Commonwealth Division. Early in 1931 he was elected executive vice-president, with headquarters at Eddystone, Pa., and in September of that year was elected president of the corporation. Due to ill health, he resigned the presidency on June 22, 1945, at which time he was elected chairman of the board of directors.

Harrison Hoblitzelle

CONSTRUCTION

Union Pacific.—Company forces of this road are completing, or have recently completed, the following projects (estimated costs in parentheses): Enlarge abutments, repair piers and construct ice breakers on double-track bridge No. 23.86, near Waterloo, Neb. ($87,000); alter railroad facilities in connection with construction of subway at Grand Island, Neb. ($270,000); improve coach watering facilities at North Platte, Neb., ($29,000); raise grade of track one foot and replace four-span pile approaches to T.P.G. bridge No. 4161, near Agnew, Neb., with two-span 20-ft. I-beam approaches ($43,250); improve coach watering facilities at Cheyenne, Wyo. ($27,400); construct 10,750 ft. of additional yard trackage in Green River, Wyo., and rearrange other facilities to relieve congestion and facilitate movement of freight ($74,900); build 11,100 ft. of mine trackage to serve a new mine of the Clayton Coal Company, St. Vrains, Colo. ($62,000); replace eight-span pile trestle, bridge No. 1.51, South Pass branch, near Rock Springs, Wyo., with one 80-ft. D.P.G. span and two-span pile trestle approach at each end ($32,200); install improved facilities for watering coaches at Salt Lake City, Utah ($42,500); construct 9,900 ft. of yard trackage and install air line and air compressor to facilitate movement of freight traffic and relieve congestion at the yard in Milford, Utah ($78,850); replace five-span frame trestle, bridge No. 512.64, near Modena, Utah, with three 20-ft. ballast deck I-beam spans ($32,500); construct 2,100 ft. of track and 26-ft. extension to concrete arch culvert,

and rearrange signals to provide more flexible operation through the yard at Caliente, Nev. ($40,000); replace three-span pile trestle, bridge No. 427.73, near Cloud, Nev., with 30-ft. I-beam bridge ($24,227); construct 4,500 ft. of additional yard trackage to provide more room for handling expanded operations in the yard at Provo, Utah ($28,300); construct 4,825 ft. of additional yard and industrial trackage at Idaho Falls, Idaho, and rearrange railroad facilities to provide for expanding operations in that area ($48,000); extend present passing tracks 2,900 ft. at Payson, Utah, 3,600 ft. at Nephi, and 3,200 ft. at Parley ($544,200); construct 5,825 ft. of additional trackage and rearrange railroad facilities at Bach, Idaho, to provide for Pacific Fruit Express cars and stock cars, thereby relieving the Idaho Falls yard of handling this equipment ($39,000); replace Gorton Creek flume, 813 ft. long, M.P. 49.63, near Wyeth, Ore., with new treated timber flume ($23,500); install 17 miles of automatic color light signals between M.P.s 96 and 113 (Paxton, Ore., to Metolius) ($63,700); and install intercommunicating loud-speaking paging system of two master station control units with five loud speakers, 23 microphones and accompanying wire and cable, to expedite yard operations at Kansas City, Kan. ($21,000).

The following jobs are to be completed by company forces in cooperation with private contractors: Construct 120-ft. by 249-ft. one-story warehouse building and 29-ft. by 90-ft. office addition with necessary trackage for lease to industry, at Topeka, Kan., the warehouse being erected by the Douglas Construction Company, Topeka ($250,000), and trackage by company forces ($7,900); construct at Pocatello, Idaho, a 200-ft. inspection pit for servicing Diesel power units (company forces—$42,000) and erect a 60-ft. by 120-ft. addition to the motor car repair shop (Brennan & Cahoon, Inc., Pocatello—$130,000); erect 150-ft. by 190-ft. one-story concrete warehouse building, with necessary trackage, at Dawson street and Fourth avenue, Seattle, Wash., for lease to industry, the warehouse being built by J. G. Watts Construction Co. ($243,300) and the trackage by company forces ($8,250); install a drainage system at Kansas City, Kan., to provide adequate drainage for flood waters (drain line and ditch construction by company forces—$17,954; curb, gutters and catch basins by Union Construction Company—$21,346); construct 49,650 sq. ft. of paving and install drainage in stockyards of Idaho Falls, Idaho (Arrington Construction Company—$24,340) and rebuild 21 sheep pens (company forces—$24,810); and construct two 33-ft. by 85-ft. two-story frame dormitories for male and female employees at Sun Valley, Idaho, and equip seven former barrack buildings for use as dormitories. Morrison-Knudsen is building the frame dormitories ($135,500), while company forces did the work on the barrack buildings ($103,500). Furnishings and equipment for all buildings cost $42,500. A contract amounting to $240,000 has been awarded to Peter Kiewit Sons Company for erection of a 52-ft. by 282-ft. one-story locker and toilet building in the locomotive department area of the shop yard in Omaha, Neb.

ABANDONMENTS

Division 4 of the Interstate Commerce Commission has **authorized:**

Atlantic Coast Line.—To abandon 20 mi. of branch line between Fairmount, N.C., and Chadbourn. The commission said "the volume of traffic involved is wholly inadequate to support profitable operations," and added that "the record . . . does not reveal any source of new traffic."

Pennsylvania.—To abandon its Lyons Run branch, 3.8 mi., in Allegheny and Westmoreland counties, Pa. Abandonment is being expedited so the Pennsylvania Turnpike Commission can purchase the right-of-way for its western extension.

FINANCIAL

Boston & Maine.—*Acquisition of Lessors' Lines.*—This road has been authorized by the I.C.C. to acquire the properties and franchises of its wholly owned subsidiaries and lessors, the Vermont Valley and the Sullivan County, which companies the B.&M. proposes to dissolve. The V.V. extends from Brattleboro, Vt., to Bellows Falls, 24 mi., and the S.C. from Bellows Falls to a point near Windsor, Vt., 25 mi. The transaction will involve no payment by the B.&M. other than surrender of the lessors' capital stock for cancellation. In the same report, the commission authorizes the B.&M. to assume liability for $306,000 of first mortgage, sinking fund 4 per cent bonds of the V. V. Purpose of the acquisition is to simplify the corporate structure of the B.&M.

Chicago Great Western.—*Trackage Rights.*—The I.C.C. has approved this road's application to renew for 25 years its agreements with the Union Pacific and the Chicago, Burlington & Quincy, under which it uses 0.4-mi. of U.P. line; the C.B.&Q. passenger station; and about 2 mi. of the latter's track, all in Omaha, Neb. In the same report, the I.C.C. approved an application by the C.B.&Q. to renew a 1920 contract with the U.P. under which the Burlington operates over a U.P. line between Council Bluffs, Ia., and a point near the former's passenger station in Omaha, 2.7 mi. The latter agreement will continue through 1988.

Seaboard Air Line.—*Extra Dividend.*—This company has declared an extra dividend of 50 cents a share on the common voting trust certificates, payable December 31 to stockholders of record December 9.

Southern.—*Acquisition.*—This road has been authorized by the I.C.C. to purchase, for $100,000, a 4.6-mi. segment of the Buffalo, Union-Carolina between Buffalo, S. C., and a point 1.6 mi. east of Union. In the same report the I.C.C. authorizes the Buffalo to abandon the remainder of its line, an "unproductive portion" of 14.2 mi., from the point east of Union to Pride, effective upon consummation of the purchase arrangement. In authorizing the purchase the commission's Division 4 differed from a recommended report by Examiner Jerome K. Lyle, who would have set the purchase price at $75,000 (see *Railway Age* of July 16, page 65). The commission, however, refused to approve the asked price of $150,000, and expressed belief that the price it set would "provide the Southern with a cushion against disappointment in the volume of traffic anticipated and in the maintenance of various specific services," i.e., switching and operation of spur tracks. Principal reason for revising the purchase price upward was the fact that the cost of employee protection will be assumed by the Buffalo, rather than letting part of this responsibility go to the Southern "as ordinarily would devolve upon the purchaser" in a purchase proceeding. Union Merchants & Manufacturers, Inc., owner of the Buffalo, expects to employ displaced employees in its textile mills.

New Securities

Application has been filed with the Interstate Commerce Commission by:

Peoria & Pekin Union.—To assume liability for $2,500,000 series A first mortgage bonds, due January 1, 1975. The P.&P.U. proposes this issue to enable it to call for redemption on February 1, 1950, a like amount of first mortgage, series A, 5½ per cent bonds, due August 1, 1974, and callable February 1 at 104 1/6 per cent plus accrued interest from August 1, 1949. By creating the new series of first mortgage bonds to refund the existing series the road in its application expressed hope for a more favorable interest rate. The new issue, if approved, would be limited to $3,000,000, of which only $2,500,000 would be issued initially. They would be sold by competitive bids and there are sinking fund provisions.

Division 4 of the I.C.C. has **authorized:**

Meridian & Bigbee River.—To assume liability for $50,000 of trustee's certificates, bearing interest at 4 per cent, to finance repair of the Naheola bridge across the Tombigbee river in Alabama. The new certificates, to be dated November 1, 1949, and mature July 1, 1950, will be delivered to the Reconstruction Finance Corporation to evidence an advance of $50,000 for bridge repairs.

Dividends Declared

Chicago Great Western.—5% preferred, accumulated, 31¼¢, payable December 29 to holders of record December 15.

Gulf, Mobile & Ohio.—50¢, payable January 10, 1950, to holders of record December 21.

Illinois Terminal.—20¢, quarterly, payable

ANNUAL REPORTS

Railroad		Operating Revenues	Operating Expenses	Fixed Charges	Net Income	Current Assets	Current Liabilities	Long Term Debt
Chicago, Burlington & Quincy	1948	$241,363,650	$167,888,009	$33,889,548	$28,081,700	$85,611,112	$53,128,611	$183,332,141
	1947	221,179,010	149,996,343	33,513,484	27,741,870	86,380,920	49,599,544	181,745,400
Chicago, Indianapolis & Louisville	1948	19,055,141	15,487,354	207,722	718,185	7,356,838	4,108,420	22,236,821
	1947	15,586,376	12,814,318	127,262	105,324d	9,278,982	3,922,478	21,754,400
Chicago, Milwaukee, St. Paul & Pacific	1948	254,982,710	210,276,587	3,854,154	8,129,490	101,985,768	53,302,335	225,474,283
	1947	231,478,568	186,135,168	3,560,518	9,874,094	102,411,092	55,132,274	188,444,314
Detroit, Toledo & Ironton	1948	15,917,636	9,103,059	327,924	3,522,549	6,373,639	4,215,108	13,501,895
	1947	13,016,058	7,598,441	342,100	2,808,425	5,506,631	3,955,018	13,541,089
Erie	1948	175,098,788	130,063,356	4,971,828	14,295,348	61,318,890	36,385,203	195,647,742
	1947	152,101,381	119,948,838	4,950,301	6,453,262	52,931,150	31,178,679	195,875,230
Peoria & Pekin Union	1948	2,707,303	2,089,038	143,180	292,211	1,889,038	859,484	2,637,551
	1947	2,420,480	1,946,983	140,929	165,347	1,507,146	744,133	2,500,000

February 1, 1950, to holders of record January 10, 1950.

Little Schuykill Navigation R.R. & Coal Co.—semiannual, 75¢, payable January 16, 1950, to holders of record December 19.

Maine Central.—6% prior preferred, $1.50, quarterly, payable January 3, 1950, to holders of record December 27.

New London Northern.—$1.75, quarterly; extra 25¢; both payable December 27 to holders of record December 15.

Seaboard Air Line.—extra, 50¢, payable December 31 to holders of record December 9.

Average Prices Stocks & Bonds

	Dec. 13	Prev. week	Last year
Average price of 20 representative railway stocks..	40.01	40.11	44.10
Average price of 20 representative railway bonds..	88.20	87.53	87.73

RAILWAY OFFICERS

EXECUTIVE

Herbert W. Johnson, whose retirement as vice-president and comptroller of the Chicago, Burlington & Quincy, the Colorado & Southern, and the Ft. Worth & Denver City, with headquarters at Chicago, was reported in the *Railway Age* of November 26, was born on November 24, 1879, in Chicago, where he attended Lakeview High School. He started his career with the Burlington as a junior clerk at Chicago, and in 1904 became a traveling auditor. In 1910 Mr. Johnson was appointed assistant auditor of freight accounts, being advanced to auditor of expenditures in 1917, and to comptroller in 1921. He became vice-president and comptroller in 1941. Mr. Johnson is a past president of the Railway Accounting Officers' Association.

Herbert W. Johnson

B. R. Gould, director of labor relations of the Chesapeake & Ohio at Richmond, Va., has been appointed assistant to president of the Union at Pittsburgh, Pa. Mr. Gould was born at Concordia, Kan., on October 19, 1902, and was graduated from the University of Kansas (A.B. 1923, Phi Beta Kappa) and Harvard University (M.B.A. 1925). He entered railroad service during the summer of 1918 as a track laborer on the Missouri Pacific and served that road during the summer of 1923 as roundhouse laborer. During the summer of 1924 Mr. Gould was a clerk for the Delaware, Lackawanna & Western. On January 1, 1927, he joined the C. & O. as assistant cost engineer, and from 1929 to 1936 was transportation inspector, becoming assistant terminal trainmaster in the latter year. He was appointed terminal trainmaster in 1939; assistant superintendent in 1942, and division superintendent at Columbus, Ohio, in 1945. Mr. Gould served as director of labor relations of the C. & O. at Richmond from 1948 until his recent appointment with the Union.

B. R. Gould

Richard Parkhurst has been elected president of the Mystic Terminal Company, Boston & Maine waterfront operating subsidiary, and also general manager of marine terminals of the B.&M., effective January 1, 1950.

FINANCIAL, LEGAL & ACCOUNTING

A. L. Church, executive assistant to the president of the Illinois Central at Chicago, who will become also secretary on January 1, as reported in the *Railway Age* of November 26, was born on December 7, 1894, at Amboy, Ill. He attended his home town high school and Coppins Commercial College, Dixon, Ill., entering I. C. service in 1912 as a clerk in the office of the master mechanic at Freeport, Ill. From 1913 to 1917 Mr. Church served successively as stenographer in the office of the general superintendent at Chicago, and as secretary to I. C. general officers. He subsequently became secretary to the president, and

A. L. Church

in 1925 was appointed assistant chief clerk in the president's office, being advanced to chief clerk in 1931. After serving as office manager from April, 1940, to July, 1945, Mr. Church was named executive assistant to the president, which post he will retain in addition to his new duties as secretary. He is also secretary of the Chicago & Illinois Western and president of the Madison Coal Corporation.

William R. Althans, whose appointment as assistant general counsel, in charge of the Detroit office of the Chesapeake & Ohio's law department, was reported in the *Railway Age* of December 10, was born on June 27, 1908, at St. Louis, Mo. Mr. Althans attended the University of Michigan, receiving his A. B. degree from that institution in 1930 and his J. D. degree in 1932; while attending law school he served as editor of the University of Michigan Law Review. From 1932 to 1934 he was associated with the law firm of Goodenough, Voorhies, Long & Ryan at Detroit, and subsequently engaged in private practice in that city. In September, 1938, he entered the service of the Pere Marquette (now part of the C. & O.) as an attorney at Detroit. In March, 1943, he was appointed assistant general attorney at that point, being advanced in February, 1945, to general attorney, in which position he was serving at the time of his new appointment.

OPERATING

R. A. Miller, trainmaster on the Southern Pacific at Fresno, Cal., has been appointed assistant superintendent, Sacramento division, at Sacramento, Cal., succeeding **T. F. Custer,** who is on sick leave.

A. L. Blaser, assistant superintendent of the Canadian Pacific at Wilkie, Sask., has been transferred in that position to the Kenora division, with headquarters at Fort William, Ont. He succeeds **E. H. Lewthwaite,** transferred to Field, B. C., to replace **F. J. Malone,** whose promotion to superintendent at Medicine Hat, Alta., was reported in the *Railway Age* of December 3. **W. E. Brookwell,** road foreman of engines for the Calgary division, has been advanced to assistant superintendent at Calgary, Alta., succeeding **G. Meldrum,** whose promotion to superintendent at Lethbridge, Alta., was also reported in the *Railway Age* of December 3. **W. B. Knox,** district safety agent, Saskatchewan district, at Moose Jaw, has replaced Mr. Blaser at Wilkie.

Charles Covel Chapman, superintendent of the Central Kansas and Colorado divisions of the Missouri Pacific Lines, with headquarters at Osawatomie, Kan., has retired after 50 years of service. He has been succeeded by **V. C. Halpin,** formerly superintendent of the Southern Kansas and Central divisions at Coffeyville, Kan. **C. L. Christie,** mechanical consultant in the research department at St. Louis, Mo., has succeeded Mr. Halpin.

J. W. Myers, superintendent of the Chicago, Rock Island & Pacific's Western division, at Fairbury, Neb., has been appointed assistant to the general manager, with headquarters at Chicago. He is succeeded by **Robert W. Anderson,** trainmaster at Herington, Kan.

Howard H. Sparling, general manager for the Western region of the Canadian National, at Winnipeg, Man., has retired from railroad service. Appointed to succeed Mr. Sparling is **D. V. Gonder,** assistant general manager at Winnipeg. Mr. Sparling was born on November 18, 1883, at Rockwood, Ont., and began his railroad career in 1901 as an operator with the Grand Trunk (now part of the C. N.). He subsequently served in various positions until 1929, when he became superintendent of transportation of the C. N. at Edmonton, Alta. He became division superintendent at that point in 1939, and in 1942 was appointed general superintendent of the Saskatchewan division at Saskatoon. Mr. Sparling was transferred to Edmonton in February, 1944, as general superintendent of the Alberta district, and in November of that year was made chief of transportation at Montreal, Que. In May, 1946, he was appointed assistant general manager of the Winnipeg region, at Winnipeg, becoming general manager of the Western region at that point in November, 1947.

Howard H. Sparling

TRAFFIC

Walter M. Slavik, general freight agent in charge of sales and service in the Chicago territory for the Chicago South Shore & South Bend, has been appointed eastern traffic manager, with headquarters at New York, succeeding **George B. Hubbard,** retired. Mr. Slavik was born on April 12, 1908, in Chicago, where he received his education in the parochial grade and high schools. He was employed by the Central Freight Association and Illinois Freight Association prior to entering the service of the South Shore in January, 1930, in the rates and divisions section of the traffic department. In December, 1939, he was promoted to commercial agent, and in May, 1946, was appointed general agent at Chicago. Mr. Slavik became general freight agent in charge of sales and service in May, 1948.

Charles W. Dickinson, general agent of the Illinois Central at Cleveland, Ohio, will retire on December 31, after more than 28 years of service. He will be succeeded by **Jack H. Butridge.**

Andrew Sutherland, assistant foreign freight agent, rates, of the Central region of the Canadian National, has been appointed assistant general freight agent, rates, tariffs and divisions, with system jurisdiction, having headquarters as before at Montreal, Que. **William Hindle** has been appointed assistant foreign freight agent, rates, at Montreal, also with system jurisdiction.

Clifford V. Harrow, whose promotion to freight traffic manager of the Erie at Chicago was reported in the *Railway Age* of November 26, was born on September 25, 1893, at Fremont, Neb., and attended high school at Omaha, Neb. He began his railroad career in 1912 as a clerk with the Baltimore & Ohio at Omaha, joining the Erie Dispatch (now Erie) in a similar position in 1914. Between 1919 and 1920, he was employed as a stenographer by the Union Pacific at Omaha, subsequently becoming chief clerk on the Erie at the same point. In 1924 he was appointed commercial agent at Toledo, Ohio, and in 1927, general agent at Des Moines, Iowa, returning to Omaha as general agent in 1931. Five years later he was transferred to Minneapolis, Minn., and in 1941 was advanced to division freight agent at Rochester, N. Y., being named assistant general freight agent at Chicago the next year. Mr. Harrow became general eastern freight manager at New York in 1945, and returned to Chicago in 1946 as assistant freight traffic manager, which po-

Clifford V. Harrow

sition he held at the time of his promotion.

Charles Edwin Johnson, district passenger agent of the Missouri Pacific Lines at Denver, Colo., has retired after 27 years of continuous service with the M. P.

D. G. Payne, general agent, passenger department, of the Chicago & North Western at Milwaukee, Wis., has been promoted to assistant general passenger agent at Chicago, succeeding **H. G. Van Winkle,** whose retirement was reported in the *Railway Age* of December 10. Succeeding Mr. Payne at Milwaukee is **E. D. Poulson,** district passenger agent at New York.

S. T. Allen has been appointed district passenger agent of the Seaboard Air Line at Cleveland, Ohio.

F. G. Altenburg, general agent of the New York, Chicago & St. Louis at Milwaukee, Wis., and **Hendricks Easterday,** general agent at Salt Lake City, Utah, have been appointed assistant general freight agents, with headquarters at Chicago. **Clyde W. Jones,** coal freight agent at Chicago, has become assistant coal traffic manager at that point. The title of **K. S. Boreman,** assistant freight traffic manager at Chicago, has been changed to freight traffic manager.

MECHANICAL

John L. Robson, superintendent of motive power for the Great Northern at St. Paul, Minn., has been promoted to general superintendent of motive power at

John L. Robson

that point, succeeding **Ira G. Pool,** whose promotion to general manager was announced in the *Railway Age* of December 3. Mr. Robson was born in England, attended Montana State College and Yale University, and entered railroad service with the Northern Pacific at Livingston, Mont., in 1925. He subsequently joined the operating department of the G. N. and, following several assignments throughout the system, was appointed master mechanic at Grand Forks, N. D. In 1942 he became superintendent of motive power at St. Paul.

ENGINEERING & SIGNALING

Alton V. Johnston, whose appointment as assistant chief engineer of the Central region of the Canadian National at Toronto, Ont., was reported in the *Railway Age* of December 3, was born at St. Thomas, Ont., in 1909. He began his railroad career with the C.N. in August, 1927, as a helper at Windsor, Ont., and subsequently held various positions at Jarvis, Ont., Tecumseh, St. Thomas, Niagara Falls, Thamesville and Cayuga until August, 1936, when he became bridge and building master at St.

Alton V. Johnston

Thomas. Mr. Johnston transferred to Stratford, Ont., in January, 1940, and was appointed assistant engineer at Belleville, Ont., in May, 1941, becoming division engineer at Hornepayne, Ont., in 1942 and transferring to the Belleville division in 1945. In August, 1946, he was appointed senior assistant engineer and in 1947 became office engineer of the Central region at Toronto, which position he held until he became assistant chief engineer of that region.

SPECIAL

Henry J. Schulthess, chief of personnel of the Denver & Rio Grande Western, at Denver, Colo., for the past 13 years, left that post, effective November 1, to become vice-president of the Charles L. Baker & Co., personnel and management consultants, also at Denver, effective January 1. Mr. Schulthess started his railroad career as a machinist's apprentice with the Oregon-Washington Railroad & Navigation Co. (part of the Union P cific) in October, 1909, later working as machinist at Ogden, Utah. Starting in March, 1916, Mr. Schulthess worked successively in supervisory capacities in the mechanical departments of the Oregon Short Line (U.P.) Southern Pacific, U.P., and Utah railway until 1920, when he went with the Railway Educational Bureau of Omaha. In this capacity he progressed employee educational and training programs for a large number of roads until 1936, when he joined the Rio Grande to establish a personnel department for that road.

OBITUARY

John Leslie, who retired in 1932 as vice-president in charge of finance, and treasurer, of the Canadian Pacific, died in Westmount, Que., last week in his 89th year.

William M. Ray, who retired in 1939 as senior assistant engineer of the Baltimore & Ohio at Pittsburgh, Pa., died on November 5 at his home in Wilkinsburg, Pa., at the age of 80.

Thomas P. Casey, who retired on September 1, 1948, as district freight traffic manager of the Chicago, Milwaukee, St. Paul & Pacific at New York, died on December 9 at St. Vincent's hospital, Montclair, N. J., at the age of 72.

Thomas E. Bond, who retired in November, 1946, as president of the Elgin, Joliet & Eastern, with headquarters at Chicago, died at St. Joseph's hospital in that city on December 9. Mr. Bond was born in Toledo, Ohio, on November 2, 1876, and entered railroad service in 1900 as a clerk in the traffic department of the Denver & Rio Grande (now Denver & Rio Grande Western). In 1905 he entered the industrial traffic field as a rate clerk with the Colorado Fuel & Iron Co., at Denver, Colo. Three years later he returned to railroad service as a clerk in the traffic department of the

Thomas E. Bond

E. J. & E. In 1914 Mr. Bond was advanced to chief of the tariff bureau of that road. In 1918 he was furloughed from the E. J. & E. to serve as assistant western traffic manager of the United States Food Administration. Upon the close of the war, he returned to railroad service as a member of the Western Freight Traffic Commission of the U. S. Railroad Administration. In 1920, when the railroads were released from government control, Mr. Bond returned to the E. J. & E. as assistant traffic manager. In 1923 he was promoted to traffic manager, and in 1932 was elected vice-president. He became president of the road in November, 1941,

Revenue and Expense table appears on next left-hand page

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1949

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	ay and structures	Equip-ment	Traffic	Trans-portation	Total				1949	1948
Akron, Canton & Youngstown	Oct.	171	317,488	53	333,486	65,896	42,172	28,063	108,765	268,916	80.6	64,570	29,521	27,845	105,988
	10 mos.	171	3,728,020	627	3,882,603	733,590	452,837	280,932	1,204,286	2,933,869	75.6	948,734	390,081	426,015	955,841
Atchison, Topeka & Santa Fe System	Oct.	13,102	34,501,318	3,378,172	41,576,317	5,777,996	7,537,865	988,128	13,488,338	29,454,635	70.8	12,121,682	6,015,413	5,966,060	7,451,005
	10 mos.	13,103	325,537,697	40,633,634	402,003,187	66,358,103	77,682,494	9,708,841	134,655,038	305,910,613	76.1	96,092,574	49,745,648	44,063,858	57,539,005
Atlanta & St. Andrews Bay	Oct.	82	234,374	937	240,260	18,143	16,779	6,749	51,201	103,412	43.0	136,848	44,246	71,347	44,957
	10 mos.	82	1,650,464	15,415	1,726,005	263,618	147,559	67,357	450,749	1,039,715	60.2	686,290	256,234	284,951	393,390
Atlanta & West Point	Oct.	93	276,947	39,898	358,721	40,196	49,691	13,517	165,001	292,377	81.5	66,344	29,601	11,777	7,578
	10 mos.	93	2,532,100	464,264	3,381,451	393,186	494,237	141,151	1,674,112	2,935,032	86.8	446,419	235,582	20,546	159,175
Western of Alabama	Oct.	133	311,754	40,138	385,356	41,737	56,353	13,516	153,450	286,864	74.4	98,492	45,051	44,936	50,899
	10 mos.	133	2,628,153	456,559	3,382,140	413,933	546,925	141,205	1,476,887	2,790,684	82.5	591,456	346,749	242,836	377,398
Atlantic Coast Line	Oct.	5,526	7,360,236	939,762	8,977,365	1,839,636	1,653,742	295,979	3,835,273	8,081,830	90.0	895,535	700,000	220,381	—662,309
	10 mos.	5,548	79,699,010	15,002,882	102,193,678	17,321,333	19,304,341	2,998,062	43,073,781	87,696,112	85.8	14,497,566	9,100,000	4,413,071	4,117,417
Charleston & Western Carolina	Oct.	343	298,606	3,453	310,892	61,479	36,123	15,610	149,694	272,656	87.7	38,236	20,000	21,050	22,907
	10 mos.	343	3,593,159	27,707	3,715,344	757,661	669,734	157,258	1,641,162	3,336,374	89.8	378,970	255,000	67,249	359,255
Baltimore & Ohio	Oct.	6,202	18,404,842	1,600,756	21,656,549	3,160,627	4,893,974	698,378	10,587,176	20,558,977	94.9	1,097,572	512,715	—114,543	4,439,722
	10 mos.	6,202	264,477,286	18,127,447	300,177,942	37,817,510	61,538,195	7,339,777	126,609,603	246,794,953	82.2	53,382,989	23,421,499	23,801,207	37,905,450
Staten Island Rapid Transit	Oct.	29	173,749	45,952	225,822	35,060	37,681	1,400	119,577	212,011	93.9	13,811	32,088	—32,594	—14,411
	10 mos.	29	1,772,934	529,256	2,352,143	394,864	389,169	16,595	1,250,524	2,333,032	99.2	19,111	330,847	—460,971	—412,452
Bangor & Aroostook	Oct.	602	631,785	35,992	702,473	205,627	175,803	21,812	202,658	653,082	93.0	49,391	54,690	16,542	222,777
	10 mos.	602	10,404,076	364,497	11,085,562	2,566,828	1,822,320	128,177	2,825,815	7,816,767	70.5	3,268,795	1,658,499	1,651,029	2,192,665
Bessemer & Lake Erie	Oct.	214	602,379	1,391	645,105	236,295	485,990	15,433	321,059	1,148,929	178.1	—503,824	—124,479	—194,548	569,373
	10 mos.	214	18,947,824	13,684	19,153,607	2,111,242	6,190,285	166,731	4,601,777	13,862,454	72.4	5,291,153	3,013,396	3,867,291	6,874,594
Boston & Maine	Oct.	1,712	5,347,116	942,883	6,964,526	1,067,242	1,064,757	111,299	2,999,861	5,549,417	79.7	1,415,109	624,436	446,340	867,495
	10 mos.	1,739	51,181,911	10,997,240	68,277,089	11,249,203	10,840,619	1,038,806	29,602,516	55,788,040	81.7	12,489,049	5,528,310	4,030,621	6,467,773
Burlington-Rock Island	Oct.	228	384,601	47,602	456,929	36,127	41,836	4,422	143,231	247,040	54.1	209,889	11,762	132,729	24,637
	10 mos.	228	3,365,740	508,634	4,112,135	521,420	427,101	48,068	1,586,971	2,795,861	68.0	1,316,274	97,655	598,045	531,446
Cambria & Indiana	Oct.	35	1,558	.....	1,589	18,229	50,505	864	8,813	87,467	5,504.5	—85,878	—21,679	—38,349	100,289
	10 mos.	35	1,025,306	.....	1,025,732	149,584	712,483	8,656	209,481	1,178,018	114.8	—152,286	321,799	379,675	526,639
Canadian Pacific Lines in Maine	Oct.	234	279,104	44,919	348,633	115,895	65,062	7,269	163,950	363,571	104.3	—14,938	23,175	—85,653	—105,498
	10 mos.	234	4,054,932	449,266	4,771,466	1,069,748	793,529	73,909	1,898,666	3,965,281	83.1	805,185	250,477	—102,906	115,588
Canadian Pacific Lines in Vermont	Oct.	90	168,472	20,785	210,785	89,870	32,803	5,711	121,296	256,661	121.8	—45,876	12,240	—107,433	—100,628
	10 mos.	90	1,461,889	170,930	1,808,114	574,051	337,333	57,019	1,348,223	2,393,903	132.4	—585,789	132,134	—1,135,309	—1,037,542
Central of Georgia	Oct.	1,815	2,570,169	182,028	2,989,440	506,537	456,626	111,102	1,388,083	2,626,288	87.9	363,152	217,825	139,866	177,267
	10 mos.	1,815	24,407,194	2,320,299	29,077,025	4,877,589	4,663,351	1,099,754	14,016,798	26,346,718	90.6	2,730,307	2,087,691	319,877	1,619,607
Central of New Jersey	Oct.	415	2,307,718	502,415	2,988,417	398,146	402,870	48,238	1,556,074	2,561,357	85.7	427,060	377,935	—438,433	—173,497
	10 mos.	415	23,848,006	5,270,743	31,013,154	4,678,120	5,284,038	529,674	15,868,252	28,201,562	90.9	2,811,592	3,847,199	—3,910,374	—2,661,618
Central of Pennsylvania	Oct.	212	1,339,386	10,121	1,388,370	94,351	274,301	21,051	419,990	848,678	61.1	539,692	69,244	907,300	875,182
	10 mos.	212	13,952,833	146,226	14,448,718	1,456,480	2,692,980	231,572	4,527,247	9,340,357	64.6	5,108,361	630,713	7,179,501	8,758,367
Central Vermont	Oct.	422	718,000	42,000	810,000	157,498	166,180	15,343	377,596	748,796	92.4	61,204	46,913	—38,815	87,850
	10 mos.	422	6,795,000	641,000	7,956,000	1,552,739	1,437,922	154,636	3,442,806	6,965,145	87.5	990,855	482,906	81,921	652,427
Chesapeake & Ohio	Oct.	5,114	10,957,888	647,493	12,323,257	3,372,630	3,687,652	497,028	6,361,239	14,943,584	121.3	—2,620,327	Cr. 285,365	—2,338,938	4,859,286
	10 mos.	5,107	210,400,717	8,251,142	229,649,133	35,680,868	48,605,951	5,434,169	83,618,872	184,625,492	80.4	45,023,641	24,119,799	21,964,534	39,801,365
Chicago & Eastern Illinois	Oct.	909	1,677,470	230,658	2,132,223	294,335	327,696	99,033	914,139	1,760,521	82.6	371,702	150,000	90,970	240,044
	10 mos.	909	18,207,783	2,908,898	23,317,792	3,322,597	4,245,347	1,046,692	9,858,489	19,893,272	85.3	3,424,520	1,406,918	826,413	1,758,424
Chicago & Illinois Midland	Oct.	130	156,073	740	171,176	71,094	106,392	23,035	111,979	346,077	202.2	—174,901	Cr. 60,123	—119,535	276,418
	10 mos.	131	5,909,663	8,019	6,089,451	814,904	1,323,182	246,907	1,826,389	4,554,955	74.8	1,534,496	628,096	748,103	1,926,899
Chicago & North Western	Oct.	8,076	11,804,144	1,560,236	14,950,637	2,114,444	2,405,253	309,262	6,879,882	12,443,977	83.2	2,506,660	1,003,728	1,106,675	1,087,668
	10 mos.	8,076	111,249,597	18,523,160	144,825,199	23,460,723	29,108,202	3,124,180	69,354,824	132,746,186	91.7	12,079,013	10,179,515	296,317	8,579,351
Chicago, Burlington & Quincy	Oct.	8,873	17,044,854	1,333,880	20,260,964	2,687,776	2,901,241	419,965	7,038,088	13,742,790	67.8	6,518,174	3,115,938	2,956,862	3,278,251
	10 mos.	8,745	148,516,817	15,053,590	180,195,584	32,132,726	32,199,547	4,333,461	65,421,513	141,323,400	78.4	38,872,184	20,776,159	14,390,153	27,486,857
Chicago Great Western	Oct.	1,480	2,858,275	35,164	3,106,029	717,560	425,303	99,661	887,049	2,208,430	71.1	897,599	312,247	310,857	361,347
	10 mos.	1,492	24,682,113	295,396	26,737,511	6,099,139	3,095,111	1,027,794	9,451,343	20,457,939	76.5	6,279,572	1,986,702	2,023,685	3,038,809
Chicago, Indianapolis & Louisville	Oct.	541	1,352,301	70,730	1,509,160	182,024	208,764	69,449	528,867	1,073,901	71.2	435,259	66,914	277,071	109,051
	10 mos.	541	12,995,519	887,668	14,808,806	2,550,160	2,449,157	753,115	5,691,917	12,326,288	83.2	2,482,518	756,185	910,798	1,497,619
Chicago, Milwaukee, St. Paul & Pacific	Oct.	10,671	17,289,994	1,334,369	20,620,946	2,769,287	3,506,634	400,863	8,484,046	16,048,901	77.8	4,572,045	2,179,000	1,919,532	2,383,627
	10 mos.	10,671	164,321,936	16,427,869	199,792,236	32,917,817	37,268,325	4,247,459	86,210,282	169,740,716	85.0	30,051,520	16,386,000	9,058,971	13,536,184
Chicago, Rock Island & Pacific	Oct.	7,620	13,780,535	1,596,801	16,486,394	2,266,355	2,455,428	460,188	5,991,802	11,844,465	71.8	4,641,929	1,975,480	1,991,575	1,720,680
	10 mos.	7,622	126,125,705	17,830,610	154,957,318	20,844,508	24,668,847	4,565,511	56,336,123	113,408,902	73.2	41,548,416	18,099,265	16,339,287	17,979,185
Chicago, St. Paul, Minn. & Omaha	Oct.	1,617	2,596,064	161,118	2,979,369	352,727	320,044	58,669	1,374,034	2,225,458	74.7	753,911	175,782	456,565	417,942
	10 mos.	1,617	22,082,140	2,015,554	26,183,678	3,862,643	4,195,490	567,364	13,088,040	22,910,678	87.5	3,273,000	1,774,020	367,321	1,275,472
Clinchfield	Oct.	317	957,413	3,423	971,811	149,119	200,281	32,086	256,218	668,529	68.8	303,282	169,809	183,176	543,415
	10 mos.	317	13,330,716	48,538	13,503,119	1,943,115	2,708,319	337,451	3,688,926	8,979,153	66.5	4,523,966	1,612,292	3,626,903	5,848,948

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1949

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating Expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1949	1948
Colorado & Southern	Oct.	746	939,780	73,783	1,112,002	163,300	157,460	27,265	455,331	853,046	76.7	258,956	127,285	63,858	117,445
	10 mos.	745	9,261,029	786,674	10,923,349	1,695,462	1,889,132	252,549	4,292,427	8,637,418	79.1	2,285,931	1,117,079	707,273	645,550
Ft. Worth & Denver City	Oct.	902	1,219,084	104,425	1,446,861	148,094	192,619	44,020	495,311	949,301	65.6	497,560	163,521	228,123	246,392
	10 mos.	902	10,728,107	1,199,514	12,930,196	1,897,843	1,856,949	432,218	4,498,902	9,406,835	72.8	3,523,361	1,197,617	1,663,776	1,835,557
Colorado & Wyoming	Oct.	41	17,603	.....	70,278	6,028	6,382	876	10,548	31,860	45.3	38,418	14,463	—199	34,800
	10 mos.	41	1,160,260	.....	1,942,921	135,417	205,256	9,834	754,813	1,193,286	61.4	749,635	390,069	335,422	556,434
Columbus & Greenville	Oct.	168	175,703	1,736	183,618	40,153	18,703	4,565	49,824	131,258	71.5	52,360	35,874	17,750	1,822
	10 mos.	168	1,570,577	1,773	1,629,896	379,863	301,584	47,053	462,339	1,360,878	83.5	269,018	183,741	108,623	129,639
Delaware & Hudson	Oct.	794	3,893,236	163,604	4,175,816	465,026	741,938	69,959	1,682,026	3,126,515	74.9	1,049,301	448,515	555,356	825,708
	10 mos.	794	38,626,856	1,891,284	41,670,904	6,056,978	8,965,338	708,383	17,294,699	34,764,852	83.4	6,906,052	3,543,857	3,121,665	6,237,816
Delaware, Lackawanna & Western	Oct.	968	5,099,406	769,232	6,395,469	624,460	1,012,769	162,657	2,881,278	4,899,963	76.6	1,495,506	722,938	749,910	1,236,302
	10 mos.	969	53,687,645	8,228,340	67,226,386	8,989,421	11,764,317	1,516,742	30,398,191	54,986,418	81.8	12,239,968	6,320,378	5,513,166	9,178,597
Denver & Rio Grande Western	Oct.	2,413	4,977,769	238,877	5,472,178	584,003	1,000,183	154,725	1,933,820	3,938,574	72.0	1,533,604	702,339	847,766	1,317,326
	10 mos.	2,427	49,574,847	2,756,438	54,912,423	7,970,385	10,141,208	1,606,672	19,906,289	42,310,235	77.1	12,602,188	5,753,667	6,783,516	10,474,622
Detroit & Mackinac	Oct.	232	216, 339	393	224,748	31,500	19,289	1,699	38,924	100,725	44.8	124,023	44,933	67,899	61,524
	10 mos.	232	1,497,732	7,453	1,598,049	315,000	223,998	19,914	344,994	979,603	61.3	618,446	242,931	351,186	496,956
Detroit & Toledo Shore Line	Oct.	50	411,984	.....	414,941	60,569	49,723	13,237	130,368	264,797	63.8	150,144	45,063	45,581	88,648
	10 mos.	50	4,954,935	.....	4,979,361	553,135	470,592	130,645	1,551,623	2,818,826	56.6	2,160,535	673,623	736,642	895,318
Detroit, Toledo & Ironton	Oct.	464	1,101,272	484	1,126,991	177,905	219,762	23,549	330,913	787,555	69.9	339,436	150,145	190,989	461,550
	10 mos.	464	12,215,807	6,322	12,647,590	1,693,411	2,367,805	240,925	3,371,077	8,049,301	63.6	4,598,289	1,821,739	2,361,148	2,988,844
Duluth, Missabe & Iron Range	Oct.	574	286,642	1,536	366,420	648,251	572,417	7,714	478,572	1,778,932	485.5	—1,412,512	Cr 491,432	—897,011	1,284,846
	10 mos.	574	32,651,145	47,735	38,314,410	6,253,826	5,484,377	80,819	10,430,905	22,893,582	59.8	15,420,828	7,796,703	7,645,381	10,411,295
Duluth, Winnipeg & Pacific	Oct.	175	305,000	1,400	310,400	71,861	40,750	4,433	131,650	256,181	82.5	54,219	25,563	9,310	—25,865
	10 mos.	175	2,681,000	26,300	2,747,800	720,973	440,176	42,463	1,277,391	2,541,944	92.5	205,856	228,656	—298,790	152,191
Elgin, Joliet & Eastern	Oct.	238	930,700	29	1,216,195	376,874	221,275	27,167	559,857	1,295,951	106.6	—79,756	—194,029	—2,170	676,224
	10 mos.	238	29,612,118	52	35,949,426	3,400,965	6,516,115	278,059	12,378,046	23,687,364	65.9	12,262,062	4,720,292	5,080,123	6,573,111
Erie	Oct.	2,231	10,776,900	561,871	12,202,021	1,218,333	2,016,439	313,797	5,306,818	9,443,033	77.4	2,758,988	992,913	1,204,997	2,387,403
	10 mos.	2,230	109,976,588	6,264,303	125,019,767	17,657,581	22,772,575	3,152,076	53,110,078	102,791,587	82.2	22,228,180	10,158,074	8,178,550	16,709,335
Florida East Coast	Oct.	575	1,211,777	279,986	1,635,806	366,482	389,710	61,692	613,710	1,571,971	96.1	63,835	278,898	—262,273	—218,919
	10 mos.	575	14,129,818	5,487,844	21,538,747	3,926,385	3,949,475	642,540	8,173,526	18,354,622	85.2	3,184,125	2,590,508	—407,668	1,402,886
Georgia Railroad	Oct.	326	603,044	23,673	674,988	97,771	99,636	27,343	319,076	573,750	85.0	101,238	33,063	80,005	121,992
	10 mos.	326	5,920,286	311,219	6,651,489	967,177	984,379	285,872	3,218,600	5,752,327	86.5	899,162	340,373	710,901	1,082,667
Georgia & Florida	Oct.	408	202,999	—4	205,642	67,288	32,000	15,556	89,410	215,600	104.8	—9,958	15,445	—38,025	—20,639
	10 mos.	408	2,320,978	1,074	2,351,796	697,046	353,328	155,760	1,011,276	2,330,062	99.1	21,734	158,867	—290,254	—75,911
Grand Trunk Western	Oct.	971	3,489,000	183,000	3,893,000	656,048	663,665	64,778	1,755,496	3,290,558	84.5	602,442	253,758	233,074	1,067,795
	10 mos.	971	34,802,000	1,883,000	39,208,000	6,671,355	6,756,147	642,415	17,463,142	33,060,929	84.3	6,147,071	2,483,372	2,588,593	4,542,877
Canadian National Lines in New Eng.	Oct.	172	145,000	4,000	165,000	54,771	21,541	2,934	105,099	193,636	117.4	—28,636	22,576	—77,511	—60,445
	10 mos.	172	1,339,000	113,000	1,720,000	680,055	423,562	28,728	1,165,012	2,414,536	140.4	—694,536	225,760	—1,201,397	—1,036,217
Great Northern	Oct.	8,318	16,712,264	876,926	18,736,717	2,684,191	2,489,809	347,049	5,983,224	12,113,421	64.7	6,623,296	2,940,133	3,190,276	5,478,022
	10 mos.	8,318	156,882,203	9,922,057	180,668,739	34,029,673	29,096,374	3,513,499	63,309,835	136,366,535	75.5	44,302,204	22,531,115	18,527,810	24,340,909
Green Bay & Western	Oct.	224	333,508	.....	338,007	84,372	25,611	18,945	98,951	240,929	71.3	97,078	38,316	37,845	28,746
	10 mos.	224	2,903,045	330	2,967,467	855,959	339,551	184,035	952,052	2,460,737	82.9	506,730	244,102	93,801	189,726
Gulf, Mobile & Ohio	Oct.	2,901	5,703,510	356,159	6,451,508	1,147,217	1,111,495	224,301	1,948,774	4,738,839	73.5	1,712,669	668,171	695,215	1,002,257
	10 mos.	2,901	52,061,483	4,436,568	60,668,599	10,651,182	10,590,859	2,273,375	19,695,426	46,235,460	76.2	14,433,139	5,868,015	5,859,204	7,779,773
Illinois Central	Oct.	6,542	18,429,414	1,756,464	22,342,227	3,794,468	2,858,717	435,517	7,931,044	15,909,613	71.2	6,432,614	3,063,587	2,969,961	2,974,169
	10 mos.	6,546	168,515,020	20,137,013	209,752,128	38,023,098	35,640,081	4,490,496	77,026,155	164,361,165	78.4	45,390,963	24,087,282	19,752,494	24,439,052
Illinois Terminal	Oct.	474	763,200	107,056	963,990	139,619	111,443	40,693	390,974	725,961	75.3	238,029	91,404	124,820	223,290
	10 mos.	474	7,712,339	1,110,708	9,844,116	1,539,237	1,300,975	370,260	3,912,687	7,572,754	76.9	2,271,362	1,088,142	1,088,232	1,697,876
Kansas City Southern	Oct.	891	3,082,672	118,538	3,504,970	250,863	361,506	87,494	1,068,554	1,876,206	53.5	1,628,764	572,000	831,519	990,393
	10 mos.	891	29,476,360	1,045,665	33,124,213	2,836,908	3,849,215	918,297	9,650,909	18,473,070	55.8	14,651,143	5,181,000	7,605,495	8,515,908
Kansas, Oklahoma & Gulf	Oct.	327	286,009	736	289,752	48,101	26,370	16,229	99,419	208,998	72.1	80,754	41,130	17,123	126,794
	10 mos.	328	4,189,876	7,350	4,229,558	623,384	359,698	166,534	1,176,301	2,521,100	59.6	1,708,458	767,890	668,887	897,247
Lake Superior & Ishpeming	Oct.	156	49,002	48	56,300	52,876	44,240	1,657	46,856	155,088	275.4	—98,788	25,428	—123,957	102,713
	10 mos.	156	2,656,699	865	3,203,932	483,538	469,986	17,726	722,691	1,786,616	55.8	1,417,316	681,000	763,460	795,377
Lehigh & Hudson River	Oct.	96	204,951	.....	204,973	36,775	21,410	8,784	86,262	161,672	78.9	43,301	19,215	7,808	27,082
	10 mos.	96	2,307,808	.....	2,312,651	381,751	322,155	89,602	909,247	1,792,444	77.5	520,207	219,530	100,380	269,352
Lehigh & New England	Oct.	191	768,220	.....	772,820	68,248	96,822	10,966	184,209	390,534	50.5	382,286	168,685	213,570	254,158
	10 mos.	191	6,284,830	.....	6,338,337	962,695	1,038,539	108,987	1,693,010	4,111,861	64.9	2,226,476	1,063,511	1,363,406	1,728,127
Lehigh Valley	Oct.	1,252	5,049,862	272,094	5,589,874	625,660	1,014,624	135,279	2,372,119	4,390,654	78.5	1,199,220	403,106	592,661	1,323,181
	10 mos.	1,252	51,735,903	3,240,801	57,838,146	8,204,111	9,993,945	1,387,505	25,373,891	47,407,316	82.0	10,430,830	4,077,903	4,628,162	7,717,430
Long Island	Oct.	376	1,139,192	2,879,949	4,222,082	563,355	771,040	30,950	2,260,913	3,711,542	87.9	510,540	453,347	—198,089	—377,950
	10 mos.	376	11,141,400	29,280,119	42,271,069	5,522,607	7,723,165	287,625	22,517,365	37,501,996	88.7	4,769,073	4,581,531	—2,441,538	—2,464,203

Table continued on next left-hand page

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1949

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1949	1948
Louisiana & Arkansas	Oct.	756	1,528,200	64,801	1,668,017	185,874	186,538	47,548	516,794	994,226	59.6	673,791	255,809	313,947	321,111
	10 mos.	756	14,017,113	622,685	15,317,383	1,870,830	1,770,614	502,496	4,936,340	9,650,719	63.0	5,666,664	2,242,059	2,697,427	3,046,104
Louisville & Nashville	Oct.	4,783	10,745,648	848,451	12,504,557	2,128,195	2,600,000	294,193	5,517,908	11,099,814	88.8	1,404,743	1,330,335	222,524	2,255,434
	10 mos.	4,775	127,491,892	11,553,885	148,120,302	22,864,733	31,774,528	2,996,501	62,559,603	126,006,583	85.1	22,113,719	16,063,413	10,395,766	17,601,006
Maine Central	Oct.	981	1,735,004	120,268	1,990,618	385,106	385,704	18,124	721,742	1,581,713	79.5	408,905	207,169	192,093	114,395
	10 mos.	981	17,508,424	1,578,195	20,351,942	3,600,889	4,172,275	191,196	7,234,035	15,886,812	78.1	4,465,130	2,238,685	1,855,471	2,005,040
Midland Valley	Oct.	334	185,290	3	187,867	36,047	23,299	3,626	57,002	127,209	67.7	60,658	19,687	27,266	26,665
	10 mos.	334	1,573,627	86	1,604,282	373,497	196,400	35,316	540,222	1,213,840	75.7	390,442	165,413	136,205	177,710
Minneapolis & St. Louis	Oct.	1,421	1,706,127	6,493	1,768,431	296,942	264,633	118,132	552,086	1,322,431	74.8	446,000	212,178	208,032	224,634
	10 mos.	1,421	15,122,745	96,778	15,694,524	3,056,306	2,595,189	1,101,511	5,330,636	13,011,445	82.9	2,683,079	1,464,813	1,015,447	1,561,747
Minneapolis, St. Paul & S. S. Marie	Oct.	3,224	2,916,044	103,835	3,191,919	657,793	462,946	64,312	1,267,270	2,553,653	80.0	638,266	355,417	234,527	876,838
	10 mos.	3,224	27,206,072	1,171,403	30,082,508	6,099,681	4,918,698	648,343	12,176,079	24,863,343	82.7	5,219,165	2,722,397	1,923,630	2,327,202
Duluth, South Shore & Atlantic	Oct.	530	399,970	7,133	430,024	138,863	128,768	16,692	186,317	483,344	112.4	—53,320	36,745	—106,481	120,011
	10 mos.	530	4,250,520	129,279	4,652,898	1,273,036	1,001,217	177,316	2,005,690	4,636,385	99.6	16,513	264,625	—389,526	652,118
Spokane International	Oct.	152	171,075	1,494	184,791	47,191	56,322	4,276	67,156	182,911	99.0	1,880	10,957	—22,512	22,531
	10 mos.	152	1,577,454	13,237	1,705,334	412,240	215,197	40,560	697,274	1,451,549	85.1	253,785	112,508	9,561	150,491
Mississippi Central	Oct.	148	180,687	—565	185,493	39,088	21,907	12,230	52,607	134,925	72.7	50,568	20,861	18,201	25,276
	10 mos.	148	1,813,713	—916	1,856,175	506,574	226,158	124,322	489,382	1,438,166	77.5	418,009	175,038	116,335	263,325
Missouri-Illinois	Oct.	172	305,071	105	308,066	65,968	41,688	7,206	82,908	203,700	66.1	104,366	3,829	89,295	59,926
	10 mos.	172	3,075,158	2,033	3,095,778	590,809	424,812	62,958	864,804	2,008,113	64.9	1,087,665	360,940	661,311	723,207
Missouri-Kansas-Texas Lines	Oct.	3,253	6,190,001	402,546	7,182,172	872,300	994,605	225,925	2,455,774	4,840,503	67.4	2,341,669	910,471	1,049,206	953,704
	10 mos.	3,253	54,149,614	3,813,373	62,799,726	9,024,278	8,963,345	2,213,351	23,495,740	46,533,978	74.1	16,265,748	6,473,759	6,188,169	7,557,470
Missouri Pacific	Oct.	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
	10 mos.	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Gulf Coast Lines	Oct.	1,712	2,190,821	70,788	2,437,770	469,995	317,854	71,506	893,145	1,853,943	76.05	583,827	106,678	350,824	350,452
	10 mos.	1,713	29,054,140	928,832	31,672,083	5,607,798	4,002,034	803,451	10,912,007	22,514,038	71.08	9,158,046	2,582,151	4,458,402	6,211,367
International-Great Northern	Oct.	1,110	1,938,312	44,085	2,196,268	503,472	369,196	48,305	886,884	1,898,132	86.4	298,136	116,079	76,857	326,418
	10 mos.	1,110	21,346,815	1,548,370	25,317,752	4,741,248	4,053,222	515,253	10,766,417	21,118,367	83.4	4,199,385	1,133,397	1,879,693	2,009,799
Monongahela	Oct.	170	36,353	1,022	41,293	28,957	30,272	868	68,708	133,175	322.5	—91,882	35,304	—146,850	186,575
	10 mos.	170	4,809,508	10,632	4,861,837	698,896	601,894	9,953	1,705,474	3,082,803	63.4	1,779,034	426,598	369,937	1,309,423
Montour	Oct	51	26,646	.....	27,298	6,712	30,114	759	19,092	65,972	241.7	—38,674	7,326	1,482	69,347
	10 mos.	51	2,048,133	.....	2,061,540	249,826	631,842	8,230	658,531	1,648,462	79.9	413,078	437,416	492,282	710,041
Nashville, Chatt. & St. Louis	Oct.	1,049	2,265,323	118,271	2,618,465	490,113	331,276	102,031	1,006,996	2,035,309	77.7	583,156	274,201	298,223	264,283
	10 mos.	1,049	22,482,206	1,782,335	26,736,728	4,655,973	3,640,162	1,047,974	10,844,942	21,311,370	79.7	5,425,358	2,811,936	2,596,495	2,326,668
New York Central	Oct.	10,729	36,857,837	8,781,614	51,573,295	6,346,843	11,109,586	914,615	25,207,556	46,442,273	90.1	5,131,022	3,506,001	394,329	2,731,402
	10 mos.	10,729	416,473,379	99,787,735	577,611,435	78,257,644	116,464,500	9,895,775	264,485,076	499,121,553	86.4	78,489,882	43,484,030	21,026,887	30,406,843
Pittsburgh & Lake Erie	Oct.	221	643,413	62,424	774,668	227,932	612,326	64,579	839,921	1,917,172	247.5	—1,142,504	Cr 18,236	—480,880	795,607
	10 mos.	221	29,429,628	815,854	31,607,844	4,247,236	9,778,439	668,107	11,960,725	28,486,244	90.1	3,121,600	4,418,489	4,711,151	8,294,726
New York, Chicago & St. Louis	Oct.	1,687	6,967,419	106,925	7,300,257	1,045,680	972,993	223,636	2,844,119	5,386,598	73.8	1,913,659	703,868	875,612	1,764,562
	10 mos.	1,687	76,542,381	1,264,882	79,851,893	11,207,188	12,630,413	2,187,047	29,405,044	58,532,384	73.3	21,319,509	8,383,225	9,635,915	13,879,751
New York, New Haven & Hartford	Oct.	1,798	6,601,808	3,784,332	11,435,738	1,646,305	1,796,753	221,258	4,840,728	9,195,992	80.4	2,239,746	780,000	695,048	971,811
	10 mos.	1,798	67,850,912	41,476,440	120,704,630	17,631,367	18,192,703	2,377,146	51,161,551	96,972,633	80.3	23,731,997	9,360,000	7,191,547	9,086,566
New York Connecting	Oct.	21	145,584	.....	163,705	88,570	17,262	.....	48,476	156,808	95.8	6,897	61,954	—49,757	101,093
	10 mos.	21	1,829,417	.....	1,961,702	740,515	236,599	.....	553,486	1,556,224	79.3	405,478	551,822	99,750	654,048
New York, Ontario & Western	Oct.	544	561,842	613	598,987	96,828	95,094	25,837	269,912	516,797	86.3	82,190	45,930	—33,625	799
	10 mos.	544	5,088,540	139,461	5,641,319	983,777	887,648	288,135	2,710,307	5,205,249	92.3	436,070	385,707	—617,777	—820,945
New York, Susquehanna & Western	Oct.	120	322,800	42,435	373,444	46,560	54,096	5,693	174,184	303,143	81.2	70,301	33,001	12,132	94,173
	10 mos.	120	3,255,344	411,605	3,787,086	471,062	546,636	60,396	1,699,734	3,018,824	79.7	768,262	318,403	187,107	400,337
Norfolk & Western	Oct.	2,129	5,292,363	358,028	6,111,305	1,819,302	1,888,060	250,532	3,228,994	7,679,098	125.7	—1,567,793	1,341	—1,162,849	3,968,562
	10 mos.	2,129	113,452,745	4,686,355	123,620,220	19,072,100	27,810,421	2,674,482	41,282,002	96,222,705	77.8	27,397,515	17,370,823	16,311,197	33,279,625
Norfolk Southern	Oct.	683	714,484	15	733,208	154,267	99,319	39,882	251,010	605,825	82.6	127,383	56,750	48,189	89,695
	10 mos.	683	7,028,730	3,226	7,264,120	1,476,755	910,534	428,973	2,457,063	5,849,301	80.5	1,414,819	732,993	482,183	810,610
Northern Pacific	Oct.	6,889	11,864,915	469,992	13,306,421	2,077,562	2,442,175	272,167	4,854,978	10,221,607	76.8	3,084,814	1,874,399	1,771,631	3,094,332
	10 mos.	6,889	109,512,708	6,360,981	125,535,137	24,284,984	24,679,786	2,651,803	47,232,141	105,175,517	83.8	20,359,620	13,993,917	9,355,638	16,732,682
Northwestern Pacific	Oct.	331	758,367	8,035	795,740	159,731	84,376	6,613	354,421	619,640	77.9	176,100	43,260	78,066	91,285
	10 mos.	331	6,625,125	55,029	6,948,115	1,750,058	862,289	46,153	3,237,775	6,032,709	86.8	915,406	396,589	76,604	512,106
Pennsylvania	Oct.	10,142	37,664,970	10,922,746	54,808,748	6,227,635	11,652,829	1,148,734	28,417,507	50,170,489	91.5	4,638,259	4,615,903	—1,191,962	12,141,208
	10 mos.	10,142	523,790,194	124,471,709	715,248,604	93,109,532	157,776,755	12,503,943	324,428,301	616,907,858	86.3	98,340,746	54,644,628	28,816,003	58,505,839
Pennsylvania-Reading Seashore Lines	Oct.	386	441,650	142,591	610,435	121,117	76,137	11,357	565,226	799,032	130.9	—188,597	86,571	—383,349	—318,873
	10 mos.	386	4,702,922	3,009,357	8,000,213	1,830,346	1,376,471	110,212	5,968,837	9,586,874	119.5	—1,586,661	901,870	—3,740,932	—2,268,428
Pittsburg & Shawmut	Oct.	97	108,215	.....	109,164	18,371	29,863	2,025	27,919	84,752	77.6	24,412	3,032	21,323	9,493
	10 mos.	97	1,780,528	.....	1,789,170	357,446	364,062	31,808	504,924	1,335,892	74.7	453,278	159,129	291,489	375,410

Table continued on next left-hand page

300 wheels ...in a 40 hr week

Such production is entirely practical with the NILES HYDRAULIC CAR-WHEEL BORER

The report which we received recently with a photograph of a Niles Hydraulic Car-Wheel Borer said simply: "Tools No. 44 Carb. tips. A cast wheel every 4 minutes. A steel wheel every 6 minutes."

We know of enough other shops that are also consistently turning out 60 or more wheels in eight hours to say that 300 wheels in a 40-hour week is entirely practical.

* * *

This Niles Hydraulic Car-Wheel Borer has a range of table speeds and feeds designed for carbide tools. After the desired speeds and feeds for roughing, finishing and chamfering are selected, they are automatically engaged at the proper time during the cycle. The cycle itself is entirely automatic, from movement of starting lever to return traverse of the boring bar and application of table brake. Wheels are chucked and unchucked by pressing buttons. Provision is made for hub facing, with hydraulic feed. (Attachment not in use when this photograph was taken.)

The Niles borer may be, and usually is, supplied with its own cranes—one, or one on each side—driven by separate motors and bolted to the machine frame. These cut loading and unloading time.

* * *

To date, 34 railroads and nine car and locomotive builders have purchased 74 of these machines. We will be glad to help you make arrangements to see one in operation. Just call the Lima-Hamilton sales office in New York, Chicago, or other principal cities, or write direct to Lima-Hamilton Corporation, Hamilton, Ohio.

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Table of Operating Revenues and Expenses appears on next left-hand page

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1949

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1949	1948
Pittsburgh & West Virginia	Oct.	135	368,851	.....	386,773	75,591	96,387	37,374	122,717	362,146	93.6	24,627	18,796	30,139	181,939
	10 mos.	135	6,089,338	646	6,276,980	1,309,980	1,250,520	409,090	1,649,017	4,953,685	78.9	1,323,295	814,781	968,718	1,635,754
Reading	Oct.	1,324	6,750,741	543,787	7,710,108	1,075,704	1,346,864	133,152	3,476,082	6,334,423	82.2	1,375,685	703,137	779,724	1,368,944
	10 mos.	1,324	80,823,691	6,242,030	91,794,830	14,891,221	18,549,767	1,325,126	38,197,173	76,064,701	82.9	15,730,129	8,039,739	7,658,542	11,771,764
Richmond, Fredericksburg & Potomac	Oct.	118	993,740	344,719	1,540,015	191,080	269,027	17,700	661,996	1,242,672	80.7	297,343	178,837	63,225	53,349
	10 mos.	118	11,346,346	5,212,916	18,675,427	2,914,299	3,209,639	207,005	8,052,195	15,619,431	83.6	3,055,996	1,737,158	595,915	2,141,279
Rutland	Oct.	407	392,529	28,714	496,040	69,779	79,162	13,019	251,542	431,248	86.9	64,792	29,288	15,229	—5,544
	10 mos.	407	3,532,020	321,019	4,589,250	792,488	863,013	141,782	2,510,012	4,487,141	97.8	102,109	294,245	—384,093	87,786
Sacramento Northern	Oct.	271	209,797	162	216,411	64,007	15,851	2,204	77,426	166,730	77.0	49,681	13,133	21,132	27,173
	10 mos.	271	1,827,912	342	1,880,477	778,522	198,050	21,858	705,168	1,786,049	95.0	94,428	129,653	—156,828	—345,527
St. Louis-San Francisco	Oct.	4,644	9,000,114	523,039	10,306,980	1,412,401	1,514,946	227,970	3,717,114	7,208,675	69.9	3,098,305	1,379,819	1,558,793	1,650,776
	10 mos.	4,645	76,546,346	5,489,746	88,504,807	15,091,518	15,175,406	2,341,935	35,134,483	71,700,824	81.0	16,803,983	8,619,729	8,077,916	9,707,269
St. Louis, San Francisco & Texas	Oct.	159	347,289	13,043	388,505	46,914	24,529	15,055	151,946	247,782	63.8	140,723	39,783	45,259	105,842
	10 mos.	159	3,413,030	106,060	3,727,694	559,291	333,220	160,027	1,534,592	2,686,821	72.1	1,040,873	297,932	307,686	461,127
St. Louis Southwestern Lines	Oct.	1,569	5,817,616	84,846	6,119,197	685,952	596,228	141,799	1,761,578	3,354,276	54.8	2,764,921	1,160,560	1,317,110	1,288,413
	10 mos.	1,569	47,404,407	643,166	49,905,181	6,789,073	6,352,610	1,418,362	16,045,886	32,352,226	64.8	17,552,955	7,487,638	7,938,965	9,796,253
Seaboard Air Line	Oct.	4,150	7,819,169	880,669	9,428,495	1,525,133	1,819,278	314,980	3,605,036	7,696,200	81.6	1,732,295	896,531	767,184	932,332
	10 mos.	4,151	81,999,256	12,717,448	102,031,461	16,623,197	19,118,099	3,189,867	38,756,990	82,605,310	81.0	19,426,151	9,293,156	8,785,270	11,412,690
Southern	Oct.	6,208	14,018,851	1,287,223	16,679,326	2,491,511	3,273,074	336,023	6,540,261	13,434,439	80.5	3,244,887	1,632,881	1,455,092	2,454,092
	10 mos.	6,350	146,082,482	15,438,021	174,845,262	26,270,956	34,219,824	3,568,176	68,250,427	140,006,533	80.1	34,838,729	16,799,859	16,281,028	24,007,098
Alabama Great Southern	Oct.	316	1,166,843	86,906	1,454,968	211,806	287,197	28,193	525,930	1,112,953	76.5	342,015	168,132	155,390	179,065
	10 mos.	316	11,259,446	1,069,649	13,498,634	2,111,488	2,834,158	295,874	4,775,961	10,565,541	78.3	2,933,093	1,707,983	1,279,147	2,171,930
Cinn. New Orleans & Texas Pacific	Oct.	337	2,580,277	140,218	2,917,979	450,873	558,371	59,070	817,703	1,985,124	68.0	932,855	468,911	470,885	612,893
	10 mos.	337	26,820,372	1,839,698	30,295,577	4,110,497	5,665,780	599,842	9,124,988	20,556,643	67.9	9,738,934	4,759,401	5,228,592	6,862,555
Georgia Southern & Florida	Oct.	397	469,811	37,247	550,051	156,651	49,921	6,719	185,431	411,356	74.8	138,695	15,215	26,449	19,862
	10 mos.	397	4,755,868	631,318	5,914,237	1,426,987	548,704	71,443	2,035,023	4,230,325	71.5	1,683,912	439,128	404,357	394,465
New Orleans & Northeastern	Oct.	204	774,039	56,293	881,717	128,833	81,853	16,292	215,791	480,186	54.5	401,531	168,742	168,493	207,042
	10 mos.	204	7,434,168	613,513	8,538,758	1,402,255	943,661	176,336	2,066,420	4,982,821	58.4	3,555,937	1,553,242	1,498,545	2,238,248
Southern Pacific	Oct.	8,142	31,169,415	2,782,057	36,389,805	4,369,700	7,156,716	709,658	13,481,899	27,487,426	75.5	8,902,379	4,159,894	3,410,903	2,741,480
	10 mos.	8,163	290,477,191	34,049,372	349,788,207	43,437,749	69,298,852	7,230,656	141,170,981	280,252,929	80.1	69,535,278	34,759,477	23,772,141	31,938,438
Texas & New Orleans	Oct.	4,316	9,344,914	631,709	10,593,114	1,571,290	1,638,078	220,204	3,802,801	7,677,684	72.5	2,915,430	1,105,900	1,178,920	1,382,776
	10 mos.	4,316	85,095,568	7,340,602	98,488,360	15,217,577	13,900,067	2,171,447	36,848,226	72,801,558	73.9	25,686,802	10,484,515	10,469,511	12,143,459
Spokane, Portland & Seattle	Oct.	945	2,207,508	61,991	2,382,433	557,260	211,627	21,034	771,059	1,642,906	69.0	739,527	173,777	402,070	103,763
	10 mos.	945	18,635,229	911,371	20,698,304	4,566,825	2,564,011	214,098	7,331,202	15,532,224	75.0	5,166,080	1,639,159	2,454,098	1,823,155
Tennessee Central	Oct.	286	297,387	1,453	317,583	54,586	52,727	9,538	104,678	238,448	75.1	79,135	22,408	33,636	—2,112
	10 mos.	286	3,359,151	26,806	3,571,137	647,060	517,765	98,835	1,370,854	2,809,357	78.7	761,780	245,746	291,890	67,386
Texas & Northern	Oct.	8	31,640	.....	35,549	2,207	2,234	289	5,801	14,166	39.8	21,383	7,232	10,525	.....
	10 mos.	8	649,230	.....	788,074	35,253	60,388	3,216	224,632	375,853	47.7	412,221	136,543	191,849	.....
Texas & Pacific	Oct.	1,854	4,167,755	251,810	4,813,981	818,432	775,270	172,580	1,871,758	3,892,837	80.9	921,144	261,078	460,093	809,060
	10 mos.	1,854	43,634,559	3,916,726	51,798,066	7,730,466	8,231,343	1,653,121	19,979,718	40,431,399	78.1	11,366,667	3,873,096	5,317,458	7,132,292
Texas Mexican	Oct.	162	212,698	.....	235,789	49,271	32,025	6,776	57,956	161,846	68.6	73,943	45,352	10,936	14,988
	10 mos.	162	2,307,028	.....	2,557,759	515,393	256,928	61,323	652,820	1,634,467	63.9	923,292	347,202	379,935	291,847
Toledo, Peoria & Western	Oct.	239	427,859	7	431,164	81,354	35,213	34,552	110,723	283,900	65.8	147,264	54,096	61,090	95,331
	10 mos.	239	3,929,490	180	3,987,438	721,888	310,982	334,699	1,030,994	2,637,071	66.1	1,350,367	516,949	568,028	558,489
Union Pacific	Oct.	9,721	32,903,330	2,433,285	38,418,738	4,614,288	6,010,202	788,096	13,119,995	26,419,570	68.8	11,999,168	5,722,963	4,120,979	5,648,644
	10 mos.	9,724	274,085,016	27,665,130	329,727,143	55,381,349	60,057,755	7,602,011	121,843,950	264,062,391	80.1	65,664,752	39,311,784	12,515,984	35,871,441
Utah	Oct.	111	145,791	.....	145,849	13,989	48,421	774	60,318	131,013	89.8	14,836	10,752	11,542	—14,755
	10 mos.	111	1,268,264	.....	1,270,249	265,020	510,360	7,122	595,326	1,453,440	114.4	—183,191	124,234	—228,391	—117,653
Virginian	Oct.	661	569,158	2,722	603,172	237,172	366,412	37,946	329,765	1,040,927	172.6	—437,755	Cr 142,000	—288,593	916,129
	10 mos.	663	23,697,693	40,861	24,576,139	3,455,020	6,642,641	393,052	5,117,963	17,372,446	70.7	7,203,693	3,503,000	4,798,894	7,565,969
Wabash	Oct.	2,393	8,032,426	453,931	9,278,099	1,171,935	1,064,354	251,113	3,633,688	6,461,260	69.6	2,816,839	1,072,973	1,247,168	1,678,297
	10 mos.	2,393	67,843,702	4,166,112	77,901,435	11,852,523	11,001,294	2,531,940	33,257,623	61,849,537	79.4	16,051,898	6,413,005	5,875,478	11,124,276
Ann Arbor	Oct.	294	619,336	9,820	644,109	81,494	76,332	23,272	296,316	494,737	76.8	149,372	66,229	61,324	105,094
	10 mos.	294	6,130,610	40,864	6,390,612	1,018,294	1,014,505	227,410	2,902,390	5,336,443	83.5	1,054,169	511,625	364,907	824,600
Western Maryland	Oct.	836	1,626,062	9,655	1,807,987	240,004	427,413	63,884	733,139	1,598,937	88.4	209,050	151,000	110,055	829,926
	10 mos.	836	31,274,493	116,411	32,839,294	4,530,810	6,692,685	697,918	10,289,945	23,589,658	71.8	9,249,636	4,603,000	5,454,197	7,521,582
Western Pacific	Oct.	1,195	3,283,134	203,364	3,600,902	503,994	512,673	180,777	1,117,971	2,513,008	69.8	1,087,894	427,543	547,154	812,226
	10 mos.	1,195	30,129,492	2,510,789	33,645,423	6,044,352	5,641,104	1,699,899	12,103,044	27,612,067	82.1	6,033,361	2,052,832	3,236,267	4,806,579
Wheeling & Lake Erie	Oct.	506	1,053,366	.....	1,151,508	261,496	229,945	60,317	546,253	1,169,531	101.6	—18,043	131,556	22,837	937,644
	10 mos.	506	24,405,583	796	25,829,897	3,755,442	4,373,735	627,679	8,291,164	17,867,785	69.2	7,962,112	4,708,294	5,256,164	7,863,337
Wisconsin Central	Oct.	1,051	1,811,458	27,814	1,955,468	289,312	323,876	58,839	880,707	1,635,098	83.6	320,370	134,638	47,480	317,141
	10 mos.	1,051	20,365,822	510,297	22,170,942	3,522,566	3,332,216	593,831	9,367,942	17,632,145	79.5	4,538,797	1,429,074	1,849,958	3,278,783

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OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 129 monthly reports of revenues and expenses representing 133 Class I steam railways

(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

FOR THE MONTH OF SEPTEMBER 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month	219,488	226,752	53,269	53,491	46,017	46,129	120,202	127,132
Revenues:								
Freight	$569,490,838	$696,795,413	$202,346,759	$262,114,162	$106,577,434	$135,501,081	$260,566,645	$299,180,170
Passenger	69,833,340	63,602,710	37,257,632	43,081,432	9,748,098	11,744,272	22,827,610	28,777,006
Mail	18,135,525	16,643,889	6,888,296	6,084,725	3,398,176	2,792,465	7,849,053	7,766,699
Express	7,063,760	11,505,687	2,284,879	4,045,386	1,081,942	1,803,273	3,966,939	5,652,028
All other operating revenues	30,446,002	36,225,892	13,751,542	16,907,653	4,355,161	5,638,531	12,339,279	14,579,708
Railway operating revenues	694,969,465	844,773,591	262,529,108	331,333,358	125,160,831	157,484,622	307,279,526	355,955,611
Expenses:								
Maintenance of way and structures	101,690,948	118,982,911	36,207,451	46,112,575	22,139,642	23,963,904	43,343,855	48,906,432
Depreciation	10,450,462	10,399,149	4,455,073	4,398,373	1,892,482	1,813,323	4,102,907	4,187,453
Retirements	1,303,298	1,963,304	309,456	166,564	162,520	625,331	831,320	1,171,409
Deferred maintenance	*371,547	*225,284	.....	*15,610	*298,814	*51,500	*72,733	*158,174
Amortization of defense projects	166,590	146,692	15,557	12,105	61,658	43,273	89,375	91,316
Equalization	1,136,968	*1,152,874	975,667	*841,116	37,039	*490,582	124,262	178,824
All other	89,005,177	107,851,922	30,451,696	42,392,259	20,284,757	22,024,059	38,268,724	43,435,604
Maintenance of equipment	122,951,764	141,408,588	51,659,203	59,885,552	24,340,227	27,897,672	46,952,334	53,625,364
Depreciation	23,578,726	21,417,077	9,253,007	8,425,962	5,349,213	4,734,973	8,976,506	8,256,142
Retirements	*120,052	*74,014	*21,838	*14,589	*8,618	*57,241	*89,596	*2,184
Deferred maintenance and major repairs	*88,474	*192,883	*50,792	*65,000	*4,527	*64,154	*33,155	*63,729
Amortization of defense projects	1,208,771	1,197,391	449,403	422,642	238,574	238,923	520,794	535,826
Equalization	252,275	*309,100	127,056	*104,683	73,749	*202,615	51,470	*1,802
All other	98,120,518	119,370,117	41,902,367	51,221,220	18,691,836	23,247,786	37,526,315	44,901,111
Traffic	15,457,596	15,810,403	5,437,442	5,419,290	3,305,755	3,385,302	6,713,399	7,005,811
Transportation—Rail line	269,330,114	311,394,767	115,255,286	130,242,668	47,712,788	56,415,927	106,362,040	124,736,172
Miscellaneous operations	9,986,389	11,041,332	3,667,605	4,169,684	1,332,929	1,455,128	4,985,855	5,416,520
General	21,570,920	22,355,417	8,477,584	8,385,074	4,686,718	4,872,028	8,406,618	9,098,315
Railway operating expenses	540,987,731	620,993,418	220,704,571	254,214,843	103,519,059	117,989,961	216,764,101	248,788,614
Net revenue from railway operations	153,981,734	223,780,173	41,824,537	77,118,515	21,641,772	39,494,661	90,515,425	107,166,997
Railway tax accruals	75,401,078	98,413,503	21,878,803	31,475,169	12,762,912	20,166,807	40,759,363	46,771,527
Pay-roll taxes	20,550,119	20,873,003	8,531,393	8,648,568	3,925,273	3,739,520	8,093,453	8,484,915
Federal income taxes	28,031,723	50,287,615	3,531,454	12,447,732	3,030,520	10,745,177	21,419,749	27,094,706
All other taxes	26,819,236	27,252,885	9,815,956	10,378,869	5,757,119	5,682,110	11,246,161	11,191,906
Railway operating income	78,580,656	125,366,670	19,945,734	45,643,346	8,878,860	19,327,854	49,756,062	60,395,470
Equipment rents—Dr. balance	11,980,719	11,341,827	4,538,217	4,492,333	*278,917	*2,341,228	7,721,419	9,190,717
Joint facility rent—Dr. balance	3,062,310	3,176,272	1,605,063	1,591,963	443,576	434,124	1,013,671	1,150,185
Net railway operating income	63,537,627	110,848,571	13,802,454	39,559,045	8,714,201	21,234,958	41,020,972	50,054,568
Ratio of expenses to revenues (percent)	77.8	73.5	84.1	76.7	82.7	74.9	70.5	69.9

FOR THE NINE MONTHS ENDING WITH SEPTEMBER, 1949 AND 1948

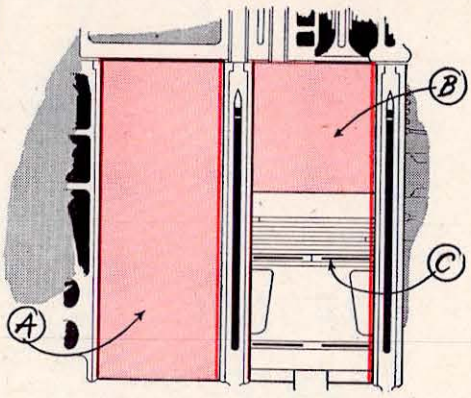
Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month:	225,828	227,077	53,453	53,628	46,030	46,145	126,345	127,304
Revenues:								
Freight	$5,344,301,588	$5,898,379,963	$2,004,223,221	$2,250,034,683	$1,074,752,791	$1,213,472,402	$2,265,325,576	$2,434,872,873
Passenger	661,102,428	724,095,693	342,894,575	367,884,865	104,140,716	113,838,319	214,067,137	242,372,509
Mail	161,221,966	139,697,693	59,450,897	50,341,957	28,999,428	25,053,663	72,771,641	64,302,073
Express	56,399,567	89,941,672	14,488,114	30,083,107	9,942,457	15,365,120	31,968,996	44,493,445
All other operating revenues	284,800,145	309,460,612	126,685,890	136,599,061	46,504,716	51,380,045	111,609,539	121,481,506
Railway operating revenues	6,507,825,694	7,161,575,633	2,547,742,697	2,834,943,678	1,264,340,108	1,419,109,549	2,695,742,889	2,907,522,406
Expenses:								
Maintenance of way and structures	999,465,380	1,005,225,418	355,177,294	374,027,893	202,257,439	209,758,212	442,030,647	421,439,313
Depreciation	95,031,732	93,189,189	40,031,525	39,529,067	16,562,673	16,232,868	38,437,534	37,427,254
Retirements	9,323,212	9,591,959	2,278,190	2,160,464	1,271,003	1,473,630	5,774,019	5,957,865
Deferred maintenance	*2,882,104	*2,922,634	*328,422	*99,146	*1,482,963	*890,916	*1,070,719	*1,932,572
Amortization of defense projects	1,350,505	1,572,348	138,923	120,646	421,242	390,804	790,340	1,060,898
Equalization	*8,398,391	317,950	*5,106,301	*1,551,857	*217,333	1,498,997	*3,074,757	370,810
All other	905,040,426	903,476,606	318,163,379	333,868,719	185,702,817	191,052,829	401,174,230	378,555,058
Maintenance of equipment	1,224,848,918	1,255,245,663	503,437,329	533,374,052	244,669,695	253,470,158	476,741,894	468,401,543
Depreciation	207,333,422	185,072,614	80,426,890	72,968,631	46,505,175	41,102,162	80,401,357	71,001,821
Retirements	*592,832	*836,323	*107,183	*105,248	*137,017	*210,372	*348,632	*520,703
Deferred maintenance and major repairs	*1,118,942	*2,905,528	*597,289	*97,000	*210,617	*907,182	*311,036	*1,901,346
Amortization of defense projects	10,946,073	11,050,579	4,019,417	4,040,329	2,148,239	2,150,512	4,778,417	4,859,738
Equalization	1,798,962	1,256,876	1,441,887	351,944	573,745	895,581	*216,670	9,351
All other	1,006,482,235	1,061,607,445	418,253,607	456,215,396	195,790,170	210,439,457	392,438,458	394,952,592
Traffic	146,445,548	142,840,386	50,091,266	48,893,725	30,881,715	31,210,856	65,472,567	62,735,805
Transportation—Rail line	2,586,298,890	2,829,714,102	1,092,872,415	1,200,129,974	471,138,859	524,389,813	1,022,287,616	1,105,194,315
Miscellaneous operations	90,228,537	98,881,263	33,266,290	37,394,005	13,308,948	14,646,083	43,653,299	46,841,175
General	205,999,543	201,524,579	79,910,588	76,690,736	44,035,331	43,844,704	82,053,624	80,989,139
Railway operating expenses	5,253,286,816	5,533,431,411	2,114,755,182	2,270,510,385	1,006,291,987	1,077,319,826	2,132,239,647	2,185,601,200
Net revenue from railway operations	1,254,538,878	1,628,144,222	432,987,515	564,433,293	258,048,121	341,789,723	563,503,242	721,921,206
Railway tax accruals	637,503,700	755,842,189	219,437,544	259,740,865	138,311,312	171,764,684	279,754,844	324,336,640
Pay-roll taxes	192,862,975	198,688,205	79,316,233	82,562,315	36,849,649	39,165,995	76,697,093	76,959,895
Federal income taxes†	201,586,182	321,958,885	50,297,653	87,514,106	51,373,533	83,607,375	99,914,996	150,837,404
All other taxes	243,054,543	235,195,099	89,823,658	89,664,444	50,088,130	48,991,314	103,142,755	96,539,341
Railway operating income	617,035,178	872,302,033	213,549,971	304,692,428	119,736,809	170,025,039	283,748,398	397,584,566
Equipment rents—Dr. balance	95,486,698	100,580,355	42,076,509	45,060,136	*6,168,492	*11,833,111	59,578,681	67,353,330
Joint facility rent—Dr. balance	28,439,643	28,973,864	13,727,502	13,957,958	4,314,920	4,161,021	10,397,221	10,854,885
Net railway operating income	493,108,837	742,747,814	157,745,960	245,674,334	121,590,381	177,697,129	213,772,496	319,376,351
Ratio of expenses to revenues (percent)	80.7	77.3	83.0	80.1	79.6	75.9	79.1	75.2

†Includes income tax and surtax.
*Decrease, deficit, or other reverse item.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

News Department continued on next left-hand page

STANDARD ENGINEER'S CASE FILE

Case D119E—Reducing Wear on Liners in Diesels



DIESEL ENGINE LINERS AND PISTON

In high-speed Diesel engines lubricated with RPM DELO Diesel Engine Lubricating Oil, wear on liners was held to a minimum with little variation over their entire areas. A constant lubricating film was maintained on them even in high-temperature belts. RPM DELO Oils are recommended for all types of Diesels. Come in all viscosity grades necessary for your engines.

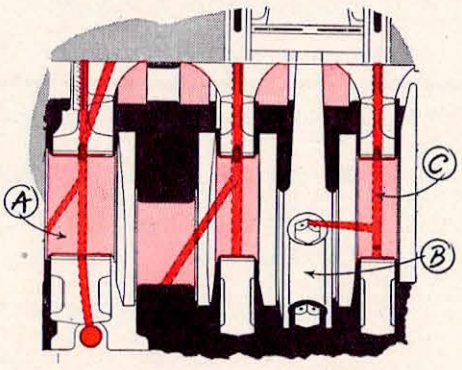
A. Special additive provides metal-adhesion qualities...keeps oil on all parts whether hot or cold, running or idle.

B. An anti-oxident resists formation of lacquer—resistance to extreme heat provides lubrication in the toughest conditions.

C. Contains detergent which keeps rings clean and operating freely...prevents scratching and gouging of liners.

RPM DELO Diesel Oil will not corrode any bearing.

Case D119F—Prolonging The Lives of Diesel Bearings



SECTION OF DIESEL ENGINE CRANK AND CAM

No bearing failures occurred between overhaul periods in Diesel engines used in the toughest service when they were lubricated with RPM DELO Diesel Engine Lubricating Oil.

A. Non-corrosive to all types of bearing metal...inherent ability of base stocks and added compound resist oxidation and formation of acid which is common cause of bearing corrosion.

B. Maintains a tough lubricating film which withstands excessive shocks and pressures.

C. Special detergent compound keeps oil passages clean and open - allows free flow of lubricant to vital points.

Another compound in RPM DELO Oil prevents foaming of the oil. An accurate measurement of crankcase levels can always be obtained.

For additional information and the name of your nearest Distributor, write

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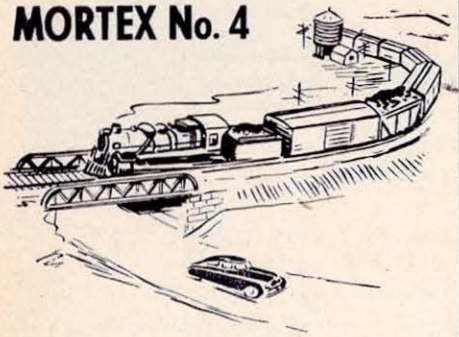

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GENERAL NEWS

(Continued from page 72)

Department of Agriculture Enters Ogden Gateway Case

The Secretary of Agriculture has been permitted by the Interstate Commerce Commission to intervene in the so-called "Ogden Gateway" case, No. 30297, in which the Denver & Rio Grande Western is seeking to have the commission force open the Ogden, Utah, gateway by requiring the Union Pacific to participate in joint through rates via that gateway on traffic between Colorado common points, or points east thereof, and points in Montana, Oregon, Washington, and British Columbia.

In the petition for permission to intervene, the Agriculture department noted that Congress has made it the duty of that department to study the cost of agricultural marketing. "Large quantities of agricultural products are produced in and distributed from, to, and within the traffic territory in this complaint," the petition said, and the Secretary of Agriculture should be permitted to intervene "to foster and protect such interests of his concern as may be involved in the proceeding."

October Truck Traffic

Motor carriers reporting to the American Trucking Associations transported in October 3,380,224 tons of freight, a decrease of 1.6 per cent below the previous month's total of 3,433,536 tons but 4.4 per cent above the 3,238,794 tons hauled in October, 1948. The figures, according to the A.T.A., are based on comparable reports from 319 carriers in 42 states.

Industrialization of Southeast Discussed at Shippers' Meeting

"Far from being economic problem No. 1, the South today is the nation's economic opportunity No. 1," was the opening keynote of the 88th meeting of the Southeast Shippers Advisory Board, sounded by C. L. Denk, Jr., chairman of the board and general traffic manager of Fulton Bag & Cotton Mills, Atlanta, Ga. Mr. Denk stated that the Southeast leads all other sections of the country in car loadings (other than coal) for 1949 and that this lead would be maintained in the foreseeable future. This optimistic prediction was bolstered by Lucien Bauduc, traffic manager, South Coast Corporation, New Orleans, La. and J. C. Sanford, traffic manager, Chicago Bridge & Iron Co., Birmingham, Ala.

The meeting, held at Orlando, Fla., was featured by a banquet on December 7 and a luncheon on December 8, given under the auspices of the Central Florida Traffic Club. W. T. Pentzer, principal horticulturist, U. S. Depart-

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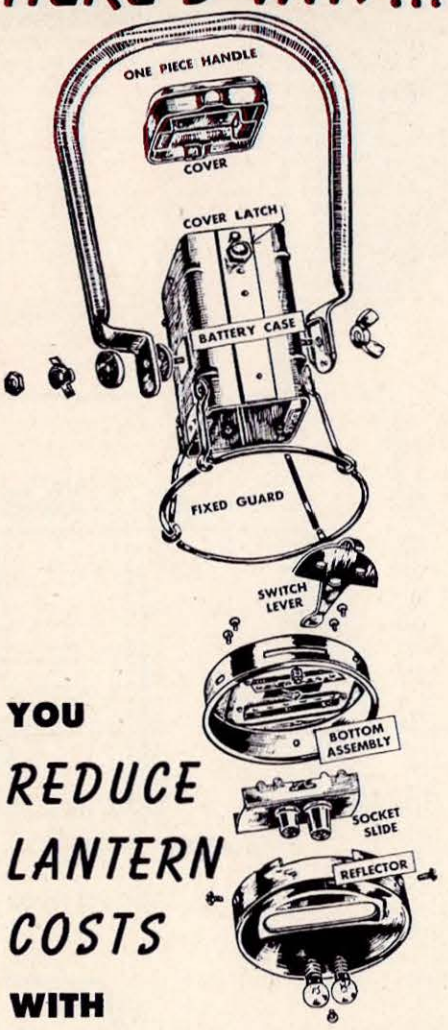

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ment of Agriculture, Beltsville, Md., was the principal speaker at the luncheon session.

Current railway problems were discussed by C. D. Mackay, assistant vice-president, Southern, Washington, D. C., who also stressed the industrialization that has taken place in the South in recent years.

October Accident Statistics

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for October and the first 10 months of 1949. The compilation, which is subject to revision, follows:

Item	Month of October 1949	Month of October 1948	10 months ended with October 1949	10 months ended with October 1948
Number of train accidents*	641	971	7,161	10,058
Number of accidents resulting in casualties	39	62	395	516
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	102	105	1,080	1,192
Injured	106	92	961	970
Passengers on trains:				
(a) In train accidents*				
Killed	5	2	6	19
Injured	79	88	489	857
(b) In train-service accidents				
Killed	1	1	16	19
Injured	137	197	1,698	2,253
Travelers not on trains:				
Killed	..	1	4	7
Injured	70	90	630	842
Employees on duty:				
Killed	35	54	335	479
Injured 1,566	2,533	18,670	26,019	
All other nontrespassers**:				
Killed	147	196	1,270	1,405
Injured	454	595	4,387	5,203
Total—All classes of persons:				
Killed	290	359	2,711	3,121
Injured 2,412	3,595	26,835	36,144	

*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of more than $250 to railway property in 1948. Beginning January 1, 1949, this minimum was raised to $275. Only a minor part of the total accidents results in casualties to persons, as noted above.

**Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	134	173	1,159	1,275
Injured	326	413	2,845	3,274

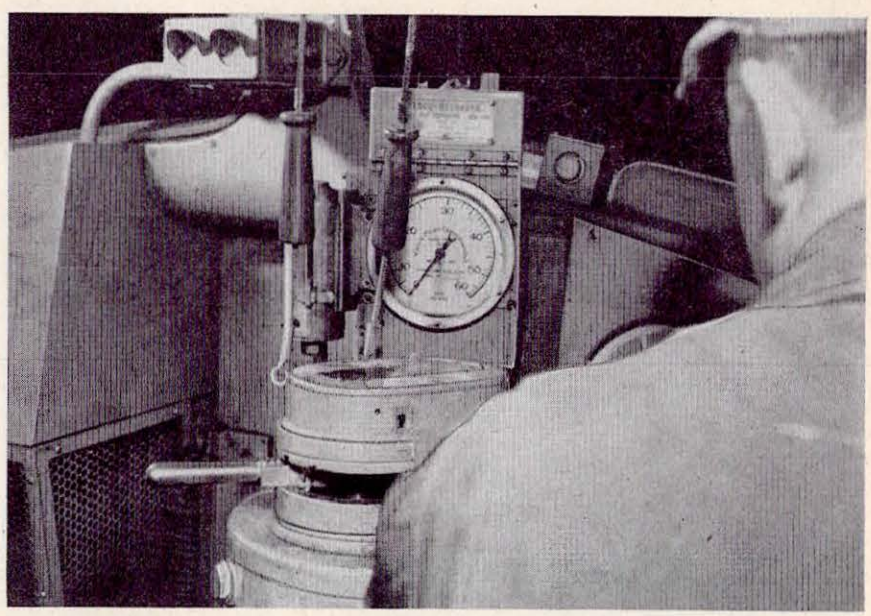
California Commission Fixes Number of S. P. Brakemen

Acting under the state's "excess crew" law, as amended by state-wide referendum in the general election of November 2, 1948, the Public Utilities Commission of California has ordered the Southern Pacific to provide "at least one conductor and three assigned brakemen" on through freight trains between Alturas and Wendell; Alturas and the Oregon line; Dunsmuir and the Oregon line, on two routes; Dunsmuir and Gerber; Roseville and the Nevada line, and Los Angeles and Indio, Bakersfield and San Luis Obispo. A third brakeman, "who may be an extra man not assigned," was ordered between San Luis Obispo and Santa Marguerita.

The commission recommended that the S. P. be permitted to operate through freight trains on its other California lines with a conductor and two brakemen. About local freight it said:

"Because of the many variables existing in this service, such as changing conditions and changing volume of traffic, it was recommended that no hard and fast rule as to the necessity for a third brakeman on local freight trains could practicably be formulated, but rather that the matter be left to the discretion of the . . . company . . . ."

The recommendation referred to was one made by the commission's Operations-Safety division, which was not contested by the railroad, and on which the commission's entire order, No. 43555, was based. Prior to the 1948 election, the state's "excess crew" law had required from three to nine brakemen on all freight trains operated in California, according to arbitrary standards determined by track grades and train lengths. The amendment approved by the voters gave to the commission responsibility for determining the number of brakemen required. (See *Railway Age* of October 23, 1948, page 41, and November 13, 1948, pages 36 and 59.)



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Current Publications

PAMPHLETS

Style Manual for American Standards. 28 pages. Published by the American Standards Association, Inc., 70 E. 45th st., New York 17. $1.

Believing that standardization applies to publication of standards as well as to materials, manufactured products, and replacement parts, the American Standards Association has just published this style manual. It is a guide to bring about greater uniformity in presentation of technical data, particularly in those generally agreed upon standards which have been given approval as "American Standard." Although primarily intended for use by technical committees working under the procedure of the association, the manual contains recommendations and suggestions which may be helpful to any organization responsible for editing and publishing technical documents.

Rails and Ideals—in U.S.A. and Canada, by R. W. Brown. 32 pages. A Newcomen address delivered at the 1949 Canadian Dinner, Royal York Hotel, Toronto, Ont., October 6. Printed by the Princeton University Press, Princeton, N. J.

This address dealt with the common heritage and ideals of the railroads in the United States and Canada, and their contributions to their respective national economies. Mr. Brown (president of the Reading) also discussed the place of government in transportation and business, using as examples the various types of transportation enterprises that have been set up from time to time in both countries.

Charles Edward Wilson, American Industrialist, by Kent Sagendorph. 50 pages. Published by the General Electric Company, Schenectady, N. Y.

A biography of Mr. Wilson published on the 50th anniversary of his first employment with General Electric.

Statistics of Class I Motor Carriers for the Year Ended December 31, 1947. 113 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from the Government Printing Office, Washington 25, D. C. $1.

Contains financial and operating statistics of motor carriers of property and motor carriers of passengers filing reports with the I.C.C.

Inside Northern Maine. 48 pages, illustrations. Published by the Bangor & Aroostook, Bangor, Me. Free.

The Bangor & Aroostook has dedicated this well-produced and well-illustrated booklet to the people of Northern Maine, and to the agricultural, industrial and recreational interests of the territory as a whole. Following a brief history of the railroad, there are chapters on the potato and potato starch industries, pulpwood and paper-making, raising beef cattle, dairying, commercial fertilizers, fishing, frozen foods, soil conservation, hunting, educational facilities, hardwoods and softwoods of Northern Maine and the port of Searsport.

BOOKS

Review of Current Research and Directory of Member Institutions, 1949. 186 pages. Published by the Engineering College Research Council of the American Society for Engineering Education. Available from F. M. Dawson, College of Engineering, State University of Iowa, Iowa City, Iowa. $1.75.

Lists, by title, 4,000 current college and university research projects in engineering subjects, representing expenditures of over $35,000,000. Entries from 82 educational institutions which hold membership in the Research Council describe the administrative policies for conducting engineering research and list the responsible personnel, research expenditures, short courses and conferences of special interest, and the titles of all engineering research studies currently active at each institution. Use of the volume is facilitated by a breakdown of research projects according to the engineering departments involved, and by a complete index to research project subjects. A number of those listed will be of interest to railroad engineers.

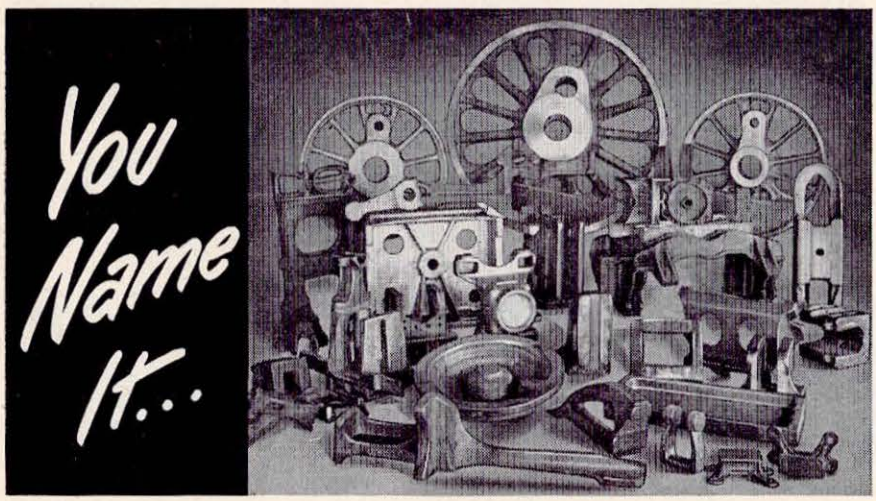
The Original 1879 Car-Builder's Dictionary's Illustrations, Car Plans and Advertisements, compiled for the Master Car-Builders' Association by Matthias N. Forney. 491 pages. Republished by Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $3.95.

In 1879 a notable event took place in American railroading that was to have far reaching results, not only in that year but right down to the present day. That event was the appearance of the Master Car-Builders' Association's first Car-Builder's Dictionary, the volume that standardized for all time names of railroad car parts. It was also one of the first books to present completely detailed illustrations and diagrams of railroad car equipment in service in that period of railroad development. The original illustrations, car plans, and advertisements that appeared in that early work are reproduced here for the thousands of model makers, railroad historians, and rail enthusiasts who know and appreciate authentic American railroadiana.

PERIODICAL ARTICLE

Cost-Ripping Ribbon Rail. Investor's Reader. November 9, 1949, pp. 20-22. Available from Merrill Lynch, Pierce, Fenner & Beane, 70 Pine st., New York 5.

A concise article, based upon information supplied by Oxweld Railroad Service Company and supplemental data obtained by the editors, refers to recent installations of pressure butt-welded rail on the railroads of the country, and features claimed savings in track maintenance costs through this type of construction, based largely upon experience of the Elgin, Joliet & Eastern and the Delaware & Hudson.



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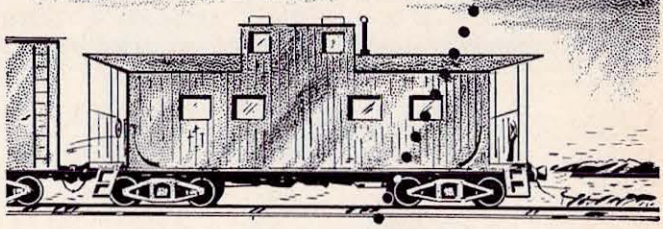

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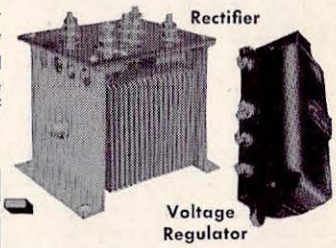
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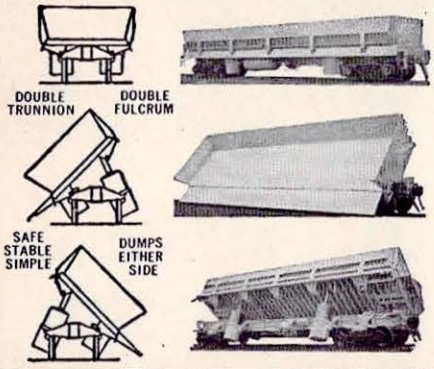

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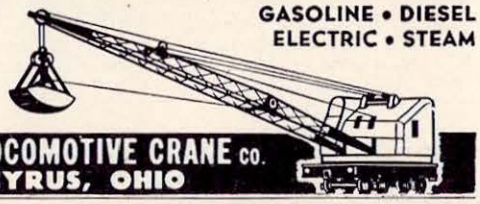

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"Advertisers often give inquiries too much weight in judging reader response," says C. B. Larrabee, Publisher of Printers' Ink in a recent editorial.

And he goes on to tell the following case history:

"An office appliance advertiser contracted for a schedule of six two-thirds pages. He made his bid for executive inquiries. He said, 'Because executives don't fill in coupons, I won't include a coupon.' His bid for response was a line, 'Write us for further particulars.'

"The advertiser's copy was good. It was factual, not too short, highly informative. The advertiser liked it.

After two advertisements he canceled. The reason? No response.

"Ironically as it turned out, the publisher subjected the issue of his paper in which the second advertisement appeared to a searching experimental reader analysis.

"Here is what the study uncovered. More than 60% of the readers of that particular issue had seen and remembered the advertisement, a phenomenal figure. Of this 60%, most had read the advertisement from beginning to end. Several of the readers had asked their secretaries to write for information.

"Several of the readers had clipped the advertisement and filed it for future reference because at the time of reading it their present equipment was operating satisfactorily.

"One reader said he was particularly interested in the advertisement because he was thinking of equipping his 20 salesmen with a device of the type advertised.

"Better than 60% readership, a number of direct orders, more potential orders, and at least one possible order. Yet the advertiser canceled because there was no reader response!"

STEEL *in stock at* **RYERSON**

Thousands of kinds, shapes and sizes of steel are ready for quick shipment from Ryerson to any shop along your line. Call Joseph T. Ryerson & Son, Inc. Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City, Pittsburgh, Los Angeles, San Francisco.

BARS—carbon & alloy, hot rolled & cold finished
STRUCTURALS—channels, angles, beams, etc.
PLATES—sheared & U. M., Inland 4-Way Floor Plate
SHEETS—hot & cold rolled, many types and coatings
TUBING—boiler & mechanical, seamless & welded
STAINLESS—Allegheny plates, sheets, bars, tubes

IT'S TIME to Rebuild or Replace Pre War TRUCK SPRING SNUBBERS

USE Symington® SBS SNUBBERS

SNUBBERS have saved many millions of dollars in maintenance of equipment and prevention of damage to lading. Such vital economy calls for their application to ALL freight cars having "all-coil" spring groups. BUT, like all friction devices, snubbers wear and lose their efficiency over a period of time, necessitating rebuilding or replacing. We will gladly inspect your Symington Snubbers and, if necessary, rebuild at low cost.

3 WAY PROTECTION

1. LADING
2. EQUIPMENT
3. ROADBED

THE SYMINGTON-GOULD CORPORATION

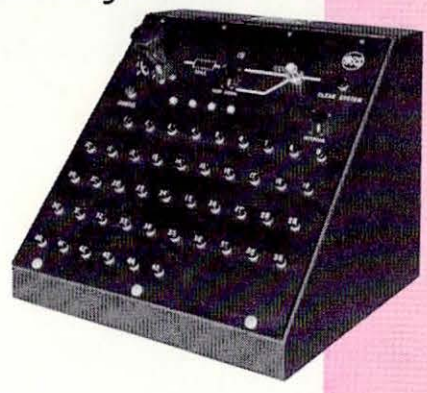
Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

New G·R·S Developments
Improve Yard Operation

The G-R-S Car Retarder System now offers you these new features that will reduce expenses and promote efficiency:

AUTOMATIC SWITCHING!



Switching of cars is done by pushing buttons at the hump—there's a pushbutton for each track. All retarders are controlled by one operator from a single tower. An installation may pay for itself within two years.

NEW CONTROL MACHINE!

The entire yard is laid out in miniature on the panel. All controls—for signals, retarders, and switches—are within easy reach. The machine can be used with or without Automatic Switching.

NEW CAR RETARDER!

The latest in G-R-S all-electric retarders—the Type E—is more rugged, and economical to install and maintain. It can be equipped for track circuits.

Two of the largest yards on the North American continent are installing these new developments: Unit Yard on the Canadian Pacific and Markham Yard on the Illinois Central.

Whether large or small, your yard can use the G-R-S Retarder System to advantage. Ask your G-R-S district office for studies and estimates.

GENERAL RAILWAY SIGNAL COMPANY
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A-2404